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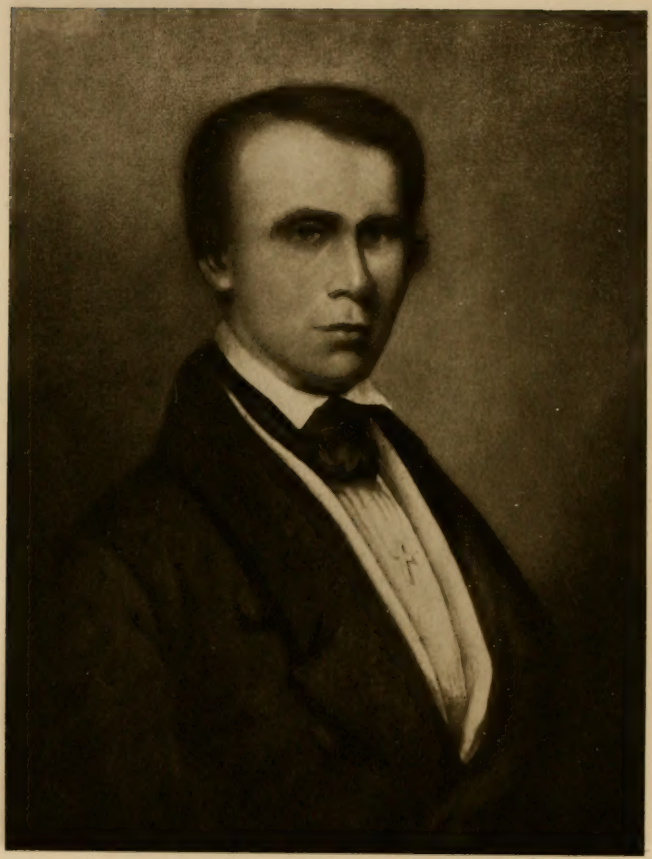

Emery Walker Photo.

John Bassett

AN
ALABAMA STUDENT

AND OTHER BIOGRAPHICAL ESSAYS

BY

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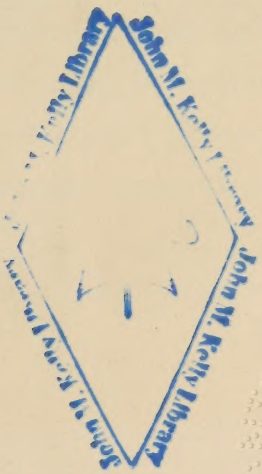

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DEDICATED

TO

WILLIAM HENRY WELCH

PROFESSOR OF PATHOLOGY, JOHNS HOPKINS UNIVERSITY

WHOSE UNSELFISH DEVOTION TO SCIENCE

ILLUSTRATES THE SPIRIT THAT IN EVERY AGE

HAS MADE MEDICINE OF SERVICE TO HUMANITY

4/52

PREFACE

To a lifelong interest in biography as a recreation I have added a strong conviction of its value in education; and so it has happened that for the occasional address a biographical subject was often chosen. Of those here collected, all of which have already appeared in the journals, more than half deal with aspects of the life of physicians in the United States. In what better way could I show gratitude for the extraordinary kindness experienced during twenty-one years than by a constant appeal to the students to take as their models the great men of the profession of their own country? In no age and in no land have the Hippocratic ideals been more fully realized than in some of the lives here portrayed. Pictures such as these, detached as many of them are from each other, have but one value to the student—to waken that precious quality of human sympathy which may enable him to appreciate that in the simple annals of such a career as the 'Alabama Student' a life may be as perfect as in a Harvey or a Locke.

WILLIAM OSLER.

CONTENTS

	PAGE
An Alabama Student	1
Thomas Dover, Physician and Buccaneer	19
John Keats, the Apothecary Poet	37
Oliver Wendell Holmes	55
John Locke as a Physician	68
Elisha Bartlett, a Rhode Island Philosopher	108
A Backwood Physiologist	159
The Influence of Louis on American Medicine	189
William Pepper	211
Alfred Stillé	232
Sir Thomas Browne	248
Fracastorius	278
Harvey and his Discovery	295

AN ALABAMA STUDENT[1]

I

CHIEF among the hard sayings of the Gospel is the declaration, 'He that loveth father or mother or son or daughter more than Me is not worthy of Me.' Yet the spirit that made possible its acceptance, and which is responsible for Christianity as it is—or rather, perhaps, as it was—is the same which in all ages has compelled men to follow ideals, even at the sacrifice of the near and the dear ones at home. In varied tones to all, at one time or another, the call comes: to one, to forsake *all* and follow Him; to another, to scorn delights and live the laborious days of a student; to the third, to renounce all in the life of a Sunnyasi. Many are the wand-bearers, few are the mystics, as the old Greek has it, or, in the words which we know better, 'Many are called, but few are chosen.' The gifts were diversified, but the same spirit animated the 'flaming heart of St. Theresa', the patient soul of Palissy the potter, and the mighty intellect of John Hunter.

We honour those who respond to the call; we love to tell the story of their lives; and while feeling, perhaps, that we could not have been, with them, faithful unto death, yet we recognize in the power of

[1] Read at the *Johns Hopkins Hospital Historical Club*, January, 1895. Reprinted from the *Johns Hopkins Hospital Bulletin*, No. 58, January, 1896.

their example the leaven which leavens the mass of selfishness about us. These 'mystics' and 'chosen' are often not happy men, often not the successful men. They see of the travail of their souls and are not satisfied, and, in the bitterness of the thought that they are not better than their fathers, are ready, with Elijah, to lie down and die.

To-night I wish to tell you the story of a man of whom you have never heard, whose name is not written on the scroll of fame, but of one who heard the call and forsook all and followed his ideal.

When looking over the literature of malarial fevers in the South, chance threw in my way Fenner's *Southern Medical Reports*, vols. i and ii, which were issued in 1849-50 and 1850-51. Among many articles of interest, I was particularly impressed with two by Dr. John Y. Bassett, of Huntsville, Alabama, in whom I seemed to recognize a 'likeness to the wise below', a 'kindred with the great of old'. I wrote to Huntsville to ascertain what had become of Dr. Bassett, and my correspondent referred me to his daughter, from whom I received a packet of letters written from Paris in 1836. I have her permission to make the extracts which are here given.

There are a few men in every community who, from temperament or conviction, cannot bow to the Baals of the society about them, and who stand aloof, in thought at least, from the common herd. Such men tread a steep and thorny road, and of such in all ages has the race delighted to make its martyrs. The letters indicate in Dr. Bassett a restless, nonconforming spirit, which turned aside from the hollowness and deceit of much of the life about him. As a student he had doubtless felt a glow of enthusiasm at the rapid de-

velopment of the science of medicine, and amid the worries and vexations of a country practice his heart burned with the hope of some time visiting the great centres of learning. As the years passed, the impulse grew more and more urgent to go forth and see the great minds which had controlled his hours of study. All students flocked to Paris in the fourth decade. Nowhere else was the pool so deeply stirred, and Laennec, Broussais, Louis, Andral, Velpeau, and others dominated the thoughts of the profession. One can imagine how carefully the plan was laid, and how for years the little surplus earnings were hoarded for the purpose. But the trial which demanded the greatest courage was the leaving of wife and children, and there are passages in the letters which indicate that the struggle was hard, not indeed without bitterness. He apologizes frequently for an apparent cruelty in leaving them for the sake of his profession; and the neighbours did not make it easier for the poor wife, whose desertion they could not understand. In one of the letters he says, 'So people say I have left you? Well, so I have, and you ought always to put the most charitable construction on such remarks; the same people when I come back will possibly say I have returned. Sometimes remarks of this sort are made carelessly, as men tramp upon worms; sometimes from wantonness, as boys pull off the wings of flies and pierce them with pins; sometimes for sport, as hunters shoot inoffensive creatures that are of no service; sometimes for spite, as we kill fleas; sometimes for experiment, as philosophers torture dogs; but seldom from wickedness, as pagans skin saints, and as Christians skin one another.' And in another he says, 'My expressions put me in mind of a sick man's repentance. I know, Isaphaena, you have

borne much for and from me, and you will have to do so again, and I hope you may do it pleasantly; and if it is any gratification to you to know, you have a husband who appreciates your conduct.'

The letters begin from Baltimore in the last week of December, 1835. He had lost his diploma, for he applied to Dr. James H. Miller, the President and Professor of Anatomy of the Washington Medical College, for a certificate, which is found among the papers, stating that he is a regular graduate of that institution, but not mentioning the year.

He took passage by the *Roscoe*, Capt. Delano in command, bound for Liverpool. He sailed on Jan. 6, and in an interesting letter an account is given of the voyage. They reached the English Channel on the 26th. A glowing description is given of the fine way in which the passengers lived on these packet-ships. He entreats his wife to feel sure that all would go well, though she might not hear from him very regularly, and he begs her in all matters to remember his motto, 'Peace on earth and good will towards men.' He expresses great anxiety about the training of his two children, and bids her not to spare the rod if necessary, saying, 'as the twig is bent the tree inclines.'

The first long letter, descriptive of Manchester, York, and Edinburgh, is illustrated by very neat little sketches. He was very much impressed with York, and says that 'if ever I was to be born again I would like it to be at York'.

In Edinburgh he visited everything, from the fifteen-story hovels to the one-story palaces. He gives a description of some graves at Leith covered with iron grates and locked to keep the surgeons out; with a watch kept the entire night. He was enchanted

with Edinburgh in all matters except one. He says, 'O Scotland! thou land o' cakes! O Edinburgh! thou city of learning, thou cluster of palaces, thou city with suburbs in the centre and precincts fit for the residences of princes, thou modern Athens! whose candles seem to emulate the stars in height, if not in lustre!!! Could you not invent any other method of getting your coal out of the mine save on the backs of females!!!! It is a fact that there are women whom they call bearers, whose business it is to carry coal out of the pit.'

He was very enthusiastic about the museum of the College of Surgeons, and the Infirmary, where he witnessed in the presence of Mr. Syme an operation by 'Mr. Ferguson, a young surgeon'.

From Edinburgh he proceeded to Glasgow, then to Belfast and Dublin, and then on to London, where he spent two weeks, apparently of great misery, as the weather was atrocious. He shook the mud of England from his feet at Dover, and departed, hoping never to be soiled with it again.

He took a through passage from London to Paris for £1 18*s*., and he gives an amusing description of the additional payments. He asked the master of the hotel to give him some information regarding French travelling, and got, he says, a regular English account, Johnsonian without his wit. 'They will cheat you at every step; they will rob you; they will poison you with dirt; everything is filthy; you will get no mutton or beef, and nothing but sour wine.' Then he says, 'Though I paid everything in London, I will give you a list of the little extra charges on the road, and in eight out of ten cases paid.' He gives an itemized bill of twenty-eight extra charges in the two days and one night which he spent in the diligence. One of his items was

for walking down a ladder, one shilling. He told this fellow to go to hell, and jumped over his ladder. 'To the commissioner of one of the hotels, for seeing that nobody cheated you but himself, six shillings.' 'The commissioner of the diligence, the most useless of all damned rascals, for pestering you and telling lies, one shilling and sixpence.'

He reached Paris and took lodgings in the Place Panthéon. He writes, 'I am now in the very region of Voltaire and Rousseau; and the Pantheon, in which one set of bigots deposited their bodies, from whence another set tore their bones, raises its classic front before my window. I look on it and feel I am not so much of an infidel as when surrounded by Christians.'

He attached himself at once to the clinic of Velpeau at La Charité. On his first day he says he did not understand more than half he said, but he understood his operations. He says there was a gentleman from Mobile, Mr. Jewett, who had been there for three years. Americans were not scarce; there were four or five from New York, two from Baltimore, and several from Boston and Philadelphia. He did not mention their names, but it is pleasant to think he may have attended classes at La Pitié with Bowditch, Holmes, Shattuck, Gerhard, and Stillé. He began dissections at once; subjects were cheap—six francs apiece—and he secured a child on the first day for forty sous.

Some of the lectures were in the evening, at seven o'clock, and he went to hear M. Helmagrande on midwifery. He says, 'The hospitals here are conducted on the most liberal terms; there is nothing to pay but for the private courses, and the fee is small for them. The facilities for the study of midwifery are astonishing; there are plenty of cases always on hand, and this

I determined to profit by.' In a letter of March 16 he mentions his daily routine: 'I get up in the morning at six o'clock and am at La Charité by seven, follow Velpeau until eight, see him operate and lecture until after nine, breakfast at ten at a café. At eleven I am at a school of practical anatomy, where I dissect until two. Then I attend a class of practical surgery until three; then hear Broussais and Andral until five; then dine. At seven I attend Helmagrande's class of midwifery, which lasts until nine; then I come to my room and read or write until eleven, when I retire.'

He was much impressed by the opportunities for dissection. In his letter of July 3 he says:

'There is a dissecting school at Clamart for the summer on a most extensive scale. There is room and material for 200 or upwards, though there are but few there at present; this place was provided for the inscribed students of the school, and they get their subjects for a mere trifle. There is not the least prejudice existing here against dissections; even the subjects do not seem to mind it, though they are aware of their fate, for more than two-thirds of the dead are carried to the l'École Pratique or Clamart. I have private instruction in the use of the stethoscope for heart complaints in La Pitié. The other day an old woman bade me adieu as we passed her bed without calling, and I stopped to ask if she was going out. Then she said she was going to Clamart, and that we might meet again.'

He had evidently occupied his time to good advantage, as early in July he received from Velpeau the appointment of *externe* at La Charité. He says in his letter of July 10:

'I have a piece of news to communicate that I know will gratify you; at least I feel very much gratified myself. This morning I received the appointment of *externe* in La Charité under Velpeau. The duties of an

externe require him to be at the hospital at six o'clock, answer to his name, follow the surgeon round a certain number of beds, attend to his prescriptions, and dress the patients. For this service we receive nothing, and for this privilege we pay nothing; you ought to be gratified at this, because it will convince you I have not been wasting my time. I was on the eve of starting for Switzerland, and was only waiting to witness the celebrations on the 27th, 28th, and 29th; but when this offer was made me I did what I have been doing all my life—made another sacrifice for my profession, and determined to remain and take the service. I have not been more gratified since I have been in Europe; it is a real benefit and came unsolicited.'

He was very much impressed by the incessant industry of the French physicians. He says:

'When I look at some of the medical men by whom I am surrounded, it makes me blush for shame; old men daily may be seen mixing their white locks with boys, and pursuing their profession with the ardour of youth. There is not a solitary great man in France that is idle, for if he was, that moment he would be outstripped; it is a race, and there are none so far ahead that they are not pressed by others; many are distanced, it is true, but there are none allowed to walk over the course. Witness Broussais, lecturing and labouring daily to sustain himself, after having elevated himself to the pinnacle; Lisfranc, an old bachelor with thousands, who after making his daily visit and *leçon* for ten months for duty, during the vacation of two months gives from choice a course of operations; and old Rollier may be seen daily supporting himself from bed-post to bed-post as jolly as if he were not far over sixty. Velpeau, from a poor boy without money, time, education, or friends, has by industry made himself one of the first surgeons in Europe.'

In one of his last letters there is this interesting note about Broussais, who had just finished his course on phrenology:

'The pupils of '36 have struck off his head. It is in bronze, a little less than our old Washington and Franklin

in wax. Broussais is a genius, and when he entered life he saw that something was to be done, or rather that *he* must do something, and he seized the science of medicine as a good old doctor would a bottle of lotion, and shook it manfully; France, Germany, all Europe, parts of Asia, and America have felt the agitation. But younger men also feel the necessity of doing something, and they are now endeavouring to quiet the commotion he has raised, and in France they have measurably succeeded. When the giant dies I doubt if he will find a successor—his conquests, like Alexander's, will be divided and then fall into insignificance. He fights well while in the ring against awful odds, for the truth is against him, but some of her brightest geniuses he has put to rout or silence. Time is now about to enter the field, and I have no doubt will place a splendid monument over him, to prevent him from being forgotten.

'I am glad I know what great men are. I am glad I know of what they are made, and how they made themselves great, though this knowledge has broken the last of my household gods; yet it has taken away the flaming swords that stood before the gates of this Paradise, where may still be seen the track of the serpent and of the devil himself, so I will keep out of bad company.'

Scattered through his long, often closely crossed letters, there are here and there some choice bits which indicate the character of the man. For months he did not hear a word from home; then letters came at long intervals. He apparently had been re-reading some of his wife's letters, in one of which she had been reproaching him for using strong language. He says:

'Isaphaena, you tell me to break myself of swearing, and not to spend my time about different professions of religion; that it will make enemies, &c. Now listen to me while I speak the truth, for on this subject you know that I always do speak what I think is true. I never did swear much, and I have quit it *almost* entirely, for nobody would understand me, and it would be useless to waste breath when I know I can put it to a better

use. As to religion, there is not much here of any kind, and I assure you I have not said ten words on the subject since I left, nor do I expect to; and here, where Voltaire, Rousseau, and the whole constellation of mighty-minded men lived and wrote and died, I feel—Isaphaena—not so much an infidel as when at home surrounded by church-going people. Why is this? I have never for a moment doubted the sincerity of my immediate friends, but at home I looked into the evil more closely than the good effects—there I saw ignorance, bigotry, and deceit ever foremost; they were the most prominent, therefore the most likely to be seen. Here I still look on the evil side and find it terrible. *God save me from a country without religion, and from a government with it*—I know you will say Amen also to the next sentence—and return me safe to a country with religion and a government without it. I am convinced that the evils of infidelity are worse—ay, much worse—than any religion whatever.

'Had I the talents of the above-mentioned men I would not spend it as they did, nor would they, could they see the effect produced. Their object was good—to correct the evils of a corrupt priesthood—but their works were like edged tools given to children. Human nature is not perfect, and their refined and perfected systems of morals will not apply, and if we were perfect we would not need them. I speak the words of truth and soberness.'

He evidently was of St. Paul's opinion with reference to the subjection of the wife. He says in one place:

'What if I have spoken cross to you, scolded at you; if it was not my duty it was at least my privilege, and I expect to have the pleasure of doing it again. Are we not told, if our right hand offends to cut it off, etc.; then surely if our better-half offends we ought to have the liberty of swearing a little.'

His last letter is from Paris, dated October 16, and he speaks in it of his approaching departure.

I have no information as to the date of his return, but his intention was, he states frequently in his letters, to

be back by the first of the year, so that after this date he probably resumed practice at Huntsville.

The two papers in Fenner's *Southern Medical Reports* are the only ones I see credited to him. They are charmingly written and display in every page the wise physician; wise not only with the wisdom of the schools, but with that deeper knowledge of the even-balanced soul who 'saw life steadily and saw it whole.'

The Report in vol. i deals with the topography, climate, and diseases of Madison County. Dr. Fenner states that it was accompanied by a beautiful map drawn by the author, and a large number of valuable statistics.

In an historical sketch of the settlement he thus depicts the early border life:

'The most of those who did not procure homes at that time, belonged to a class who, from taste or compulsion, had separated themselves from the whites, to live on the trail of the Indians; and who, like tigers, and Judases, were not without their use in the mysterious economy of nature. They surpassed the natives in physical force and in genius, and equalled them in ferocity. They had the piratical appetite for gain natural to the English race, which they had cultivated among the whites, and they readily acquired the Indian taste for blood.

'Thus, without any particular standard of morals of their own, and having fallen out with that which restrained their Christian brethren, they found their interest in adopting the ancient one of Moses and of the savages among whom they resided—"An eye for an eye," and "blood for blood".

'These men, like the fabulous Behemoth that lay in the reedy fens of the early world, drinking up the abundant waters and eating down the luxuriant forests, to make way for civilization, have left little more than a vague tradition of their existence and exploits, the latter of which has been so embellished that the former already begins to be doubted.

'Such a race leave but short records of their diseases.

Where bloodshed is always epidemic and every man his own surgeon, the few that recover feel grateful to none, and hang no "votive tablets" on the natural columns of their forests; and when a missionary or a novelist is the only historian, it would puzzle Hippocrates himself to collate the cases; but, as most things, as well as lions, track the earth in some manner as they pass over it, these early squatters have also made their mark.'

The good example of Dr. Thomas Fearn, who in the early days of the regular settlement was the leader of the profession, is well described.

'The influence of this gentleman's reputation upon the profession was favourable to the residence of thoroughbred physicians in the neighbourhood, many of whom he had been directly instrumental in educating; another consequence followed: quackery and empiricism abated. Although quackery is indigenous in the human heart, like thieving and lying, and always will exist, yet it flourishes in the indirect ratio of the science and general qualifications of the regular part of the profession. When regular, and extensively patronised physicians, armed with all requisite diplomas and the experience of years, suffer themselves to grow so dull in diagnosis as to bleed a typhoid patient half an hour before death in the evening, that they had been stimulating through the day; or so far forget, or compromise the dignity of their high calling, as to practise "Mesmerism," or prescribe "Mother's Relief" to a parturient woman, men of smaller pretensions, and more professional pride, or better information, should not, and do not wonder at quackery springing up around such, like mushrooms in a spring morning, where a fat cow has lain over night and warmed the soil for their reception.'

Dr. Fearn is credited with the practice of giving enormous doses of quinine in the malarial fevers. Dr. Bassett mentions five or six cases of night blindness caused by these large doses. Very full accounts are given of epidemics of scarlet fever and of small-pox, and a discussion on the cold water treatment of the former

disease. Dr. Bassett must have had a well-equipped library, and his references to authors both old and new are not only very full, but most appropriate.

'In the spring of 1833 we were visited by the scarlet fever in its most malignant form; during the prevalence of this epidemic more than fifty infants perished in Huntsville, at the only age they are not an annoyance here. I treated nine bad cases, and four terminated fatally; I lost nearly half in almost every instance. An older practitioner was called in, but I am not certain that in their own proper practice they were more fortunate. In more than one instance there lay more than one dead child in the same house at the same time. I feel certain that this was a most malignant disease; but I do not feel certain that in every case our best physicians remembered the united counsel of Hippocrates and Ovid, that "nothing does good but what may also hurt", and which should never be lost sight of by the man of medicine.'

The following is an extract from the account of the smallpox epidemic of 1835:

'My treatment was pretty much that laid down by Dr. Meade: bleeding, gentle aperients, cool air, sub-acid drinks, mild anodynes, and vitriolic infusion of barks. Although the purgative part of this treatment embroiled the faculty of the early part of the eighteenth century to such a degree that the like has not been heard since the days of Gui Patin and Antimony—shaking the authority even of the celebrated triumvirate, Mead, Friend and Radcliffe, who, on their part, embalmed one Dr. Woodward in their gall and handed him down to posterity, like a "dried preparation", as a specimen of the folly of small men who attempt to run against "the throned opinions of the world"—and a proof that "polite literature does not always polish its possessors"—yet we of Huntsville were too willing that our brethren should have our cases, to question each other's practice.'

Dr. Bassett states that among the 30,000 inhabitants of the county, thirty physicians practised who were paid

about $30,000 a year, 'which,' he says, 'is but *bread*, and scarce at that'; and when we contemplate the 50 lb. calomel and 1000 ozs. quinine which they swallow, it reminds one of Falstaff's bill of fare: 'But one half-penny worth of bread to this intolerable deal of sack.'

There is a very clever discussion on the question, much debated at that time, of the use of anaesthetics in labour. The following is a good extract:

'It is truly humiliating to science to have to stop and rest upon her course until the dullness of the clergy can frame an excuse for an obvious truth—to see such a man as Dr. Simpson, of Edinburgh, stopping in the midst of his *labour*, to chop logic by the wayside, like a monk of the fifteenth century, to endeavour to prove a truth at midday, by argument, which he had proven by practice in the morning, and thereby running at least a risk of losing by night what he had earned through the day. Let us examine in plain English his new translation of the Hebrew authority for the use of chloroform and see if in getting one dent out of his turtle's egg, he does not put another in.'

II

At the head of the article by Dr. Bassett in the second volume of Fenner's *Reports* stands the quotation, 'Celsus thought it better, in doubtful cases, to try a doubtful remedy, than none at all'[1]; which he quotes only to condemn in the following vigorous style:

'In giving my individual experience and opinions, I desire to censure none. In such cases the best informed fear the most, and experience but renders us charitable. I will therefore only say that I have been fortunate, in my own practice, in reversing the aphorism

[1] 'Satius est enim anceps auxilium experiri quam nullum.'

at the head of this article. That rule of practice has found favour in the eyes of every generation of both doctors and patients, and it is not wonderful that the few able men of every age that have opposed it have warred in vain,—that the science of French expectancy, and the quackery of German homoeopathy, have alike failed; dying men will have pills and parsons.

'When physicians were required, by public opinion, to follow the dictates of Hippocrates, and his immediate successors, as closely as Christians now profess to follow the commandments of Moses and the prophets, they claimed a right to act boldly their faith in these authorities, and public opinion sustained them; and however difficult the task, they found it much easier to understand the written language of Hippocrates than the yet more obscure teachings of Nature, between which and his followers he stood an infallible interpreter, making her mysteries so plain that wayfaring men, though fools, could not err therein. Hippocrates was but our fellow servant, and we are but ministers of Nature; our whole art consists in understanding her language and laws; our whole practice, in obeying her mandates: if we do not understand them, it is either our fault or misfortune; to act as though we did is quackery. Celsus says of this bold practice of old, *fere quos ratio non restituit temeritas adiuvat*; but shrewdly remarks, that "Physicians of this sort diet other men's patients more happily than their own". I doubt, however, if, in the present state of medicine, a thorough physician is ever, in any stage of any disease, so completely without rational education as to be thus nonplussed, and driven to the necessity of dealing a blow in the dark; where there are no intelligible indications, it is clear there should be no action.

'Then, if I have not followed the advice of this master, it has not been lightly laid aside; nor, as I have stated, without precedent; and if I have, in a measure, adopted another of his rules, to make food physic (*optimum vero medicamentum est cibus datus*), it has not been upon his mere authority. I revere authority, believing with the royal preacher, that "whoso breaketh a hedge, a serpent shall bite"; yet I rejoice that its fetters are broken in medicine—that we no longer are hedged with the eternal cry of "Hippocrates

and reason". But if, in getting rid of the authority of the Ancients, we have discarded the example of their labour and learning, and turned a deaf ear to their opinions, it is easier to be lamented than corrected. If the unthinking part of the profession of old, that followed authority, and "on the first day of a fever loosened the belly, on the next opened a vein, on the third gave a bolus", etc., are now represented by those who follow fashion, and give calomel, quinine, and cod-liver oil every day, we have but changed authority for fashion, and are yet in bondage; but fashion, though indomitable, changes with the wind, and if for a time it carries the small craft, the weak or designing, in its current, it soon leaves them stranded, as landmarks, at which we can at least laugh, without fear of professional martyrdom.'

Rarely has the *credo* of a zealous physician been more beautifully expressed than in the following words:

'I do not say that the study of nature, human and comparative, as far as it relates to medicine, is an easy task; let any one undertake a foreign language, and when he thinks he has mastered it, let him go into its native country and attempt to use it among the polite and well-informed; if he succeed, let him go among the illiterate and rude, where *slang* is current; into the lunatic asylum, where the vernacular is babbled in broken sentences through the mouth of an idiot, and attempt to understand this; should he again succeed he may safely say that he knows that language. Let him then set down and calculate the cost, in labour, time, and talent; then square this amount and go boldly into the study of physiology; and when he has exhausted his programme, he will find himself humbly knocking at the door of the temple, and it will be opened; for diligence, like the vinegar of Hannibal, will make a way through frozen Alps; it is the *open sesame* of our profession. When he is satisfied with the beautiful proportions of the interior, its vast and varied dimensions, the intricate and astounding action of its machinery, obeying laws of a singular stability, whose very conflict produces harmony under the government of secondary

laws—if there be anything secondary in nature!—when he is satisfied (and such are not satisfied until informed), he will be led to his ultimate object, to take his last lessons from the poor and suffering, the fevered and phrenzied, from the Jobs and Lazaruses,—into the pest-houses and prisons, and here, in these magazines of misery and contagion, these Babels of disease and sin, he must not only take up his abode, but following the example of his Divine Master, he must love to dwell there;—this is Pathology.

'When such an one re-enters the world, he is a physician; his vast labours have not only taught him how little he knows, but that he knows this little well. Conscious of this virtue, he feels no necessity of trumpeting his professional acquirements abroad, but with becoming modesty and true dignity, which constitute genuine professional pride, he leaves this to the good sense of his fellow citizens to discover.'

Dr. Bassett developed tuberculosis, and the last letter in the budget sent to me was dated April 16th, 1851, from Florida, whither he had gone in search of health. He died November 2nd of the same year, aged 46.

To a friend he writes on the date of April 5th:

'This world has never occupied a very large share of my attention or love. I have asked but little of it, and got but little of what I asked. It has for many years been growing less and less in my view, like a receding object in space; but no better land has appeared to my longing vision; what lies behind me has become insignificant, before me is a vast interminable void, but not a cheerless one, as it is full of pleasant dreams and visions and glorious hopes. I have covered it with the landscapes of Claude, and peopled it with the martyrs of science, the pioneers of truth, the hound-hunted and crucified of this world, that have earned and then asked for bread and received a serpent—all who have suffered for the truth. How glorious it is to contemplate in the future these time-buffeted at rest, with their lacerated feelings soothed as mine have been this day by the tender regard your wife has manifested for my future well-being.'

The saddest lament in Oliver Wendell Holmes's poems is for the voiceless,

> for those who never sing,
> But die with all their music in them.

The extracts which I have read show Dr. Bassett to have been a man of more than ordinary gifts, but he was among the voiceless of the profession. Nowadays environment, the opportunity for work, the skirts of happy chance carry men to the summit. To those restless spirits who have had ambition without opportunities, and ideals not realizable in the world in which they move, the story of his life may be a solace. I began by saying that I would tell you of a man of whom you had never heard, of a humble student from a little town in Alabama. What of the men whom he revered, and for whom in 1836 he left wife and children? Are they better known to us? To-day scarcely one of those whom he mentions touches us with any firmness from the past. Of a majority of them it may be said, they are as though they had not been. Velpeau, Andral, Broussais, the great teachers whom Bassett followed, are shadowy forms (almost as indistinct as the pupil), dragged out to the daylight by some *laudator temporis acti*, who would learn philosophy in history. To have striven, to have made an effort, to have been true to certain ideals—this alone is worth the struggle. Now and again in a generation, one or two snatch something from dull oblivion; but for the rest of us, sixty years—we, too, are with Bassett and his teachers, and

> No one asks
> Who or what we have been,
> More than he asks what waves,
> In the moonlit solitudes mild
> Of the midmost ocean, have swelled,
> Foam'd for a moment, and gone.

THOMAS DOVER

PHYSICIAN AND BUCCANEER[1]

As Sir Thomas Browne remarks in the *Hydriotaphia*: 'The iniquity of oblivion blindly scattereth her poppy, and deals with the memory of men without distinction to merit of perpetuity.' Thus it happens that Thomas Dover, the Doctor, has drifted into our modern life on a powder label (to which way of entering the company of posterity, though sanctified by Mithridates, many would prefer oblivion, even to continuous immortality on a powder so potent and palatable as the *Pulvis Ipecacuanhae compositus*); while Thomas Dover, the Buccaneer, third in command, one of the principal owners, and president of the Council of the *Duke* and *Duchess*—privateers of the ancient and honourable city of Bristol—discoverer of Alexander Selkirk (the original Robinson Crusoe), in spite of more enduring claims on our gratitude, has been forgotten.

Of the facts of Dover's life very little is known. Munk (*Roll of the Royal College of Physicians*, vol. ii) states that he was born in Warwickshire about 1660, that he was a Bachelor of Medicine of Cambridge, on the authority of the author of the *Athenae Cantabrigienses*, but that his name does not occur on the roll of the graduates. After taking his degree he settled in Bristol,

[1] Read at the *Johns Hopkins Hospital Historical Club*, January, 1895. Reprinted from the *Johns Hopkins Hospital Bulletin*, No. 58, January, 1896.

and having made money, joined with some merchants in a privateering expedition. 'On Dover's return to England he resumed practice at Bristol, and from the number of patients he says he visited each day during an epidemic of the fever, he must have obtained the confidence of the inhabitants of that city.' In 1721 he settled in London, and was admitted a Licentiate of the Royal College of Physicians. He resided in Cecil Street, Strand, but in the latter part of 1728 he removed to Gloucestershire, where he lived for four or five years; finally he settled in London, at first in Lombard Street, and afterwards in Arundel Street, Strand, where he died probably in the latter part of 1741 or the beginning of 1742. Essentially the same details are given by Dr. Norman Moore in the *Dictionary of National Biography*.

In his work, *The Ancient Physician's Legacy*, he often speaks with veneration of Sydenham as his Master; and in his description of the small-pox he says, 'whilst I lived with Dr. Sydenham,' so that he was probably a house pupil of the great physician, who was at the height of his fame at the very time we may suppose Dover to have been a student of medicine. On the title-page of the first edition of the *Legacy*, 1732, he speaks of forty-nine years of practice, so that he probably took his degree in 1683. Apparently he never proceeded to a doctor's degree, since he speaks of himself as a 'poor Bachelor of physic'. On the title-page of the first edition, however, the letters M.D. occur after his name.

We know really nothing of Dover's life until he appears as one of the promoters of a privateering expedition to the South Seas in 1708. In this he was associated with a group of Bristol merchants, among

whom were Alderman Bachelor and Sir John Hawkins. Two ships, the *Duke* and the *Duchess*, were fitted out with great care. Dover went as third in command, being styled Captain Dover, and as owner of a very considerable share of both vessels he was president of the Council, and had a double voice in the deliberations. The days of the buccaneers were almost numbered, but there was in Bristol at this time one of the last and one of the most famous of the old South Sea captains, William Dampier, a man who knew more of the Spanish Main and of the Pacific than any one living. He had returned recently from a disastrous voyage, and agreed to accompany Captain Woodes Rogers as pilot of the expedition. In October, 1708, the ships

> . . . sailed against the Spaniard with his hoard of plate and gold,
> Which he wrung with cruel torture from the Indian folk of old—

in which words Charles Kingsley well expresses the feelings which animated these highwaymen of the sea. The narrative of the voyage is told by Captain Woodes Rogers in *A Cruising Voyage Round the World, 1708–1711*, London, 1712.

The expedition was rendered memorable by the discovery of 'Robinson Crusoe', which is thus told in the words of Captain Rogers:

'We arrived at the Island of Juan Fernandez on the first of February, 1710, and having a good observation the day before when we found our latitude 34° 10′ S. In the afternoon we hoisted out our pinnance, in which Captain Dover set off to go on shore, though not less than four leagues from the ship. As it grew dark we observed a light on shore, which some were of the opinion was from our boat, but it was evidently too large for that, and we hung up a light to direct our

boat, firing our quarter gun, and showing lights in our mizen and fore shrouds, that our boat might find us, as we had fallen to leeward of the island. Our boat came aboard again about two in the morning, having turned back on seeing the light ashore when within a league, and we were glad they had got off so well, as it now began to blow. We were all convinced that the light which we had seen was from the shore, and therefore prepared our ships for an engagement, supposing it might proceed from some French ships at anchor, which we must either fight or want water. All this stir and apprehension, as we afterwards found, arose from one poor man, who passed in our imagination for a Spanish garrison, a body of Frenchmen, or a crew of pirates, and it is incredible what strange notions some of our people entertained about this light; yet it served to show their tempers and spirits, and enabled us to guess how our men would behave in case there really were enemies in the island.

'While under these apprehensions we stood to the back of the island in order to fall in with the southerly wind till we were past the island; then we stood back for it again, and ran close aboard the land that begins to form its NE. side. The flaws came heavily off the land, and we were forced to reef our top-sails when we opened the middle bay, where we expected to find our enemy, but all was clear and no ships either there or in the other bay near the NE. end. These are the only bays in which ships can ride that come here for refreshments, the middle one being the best. We now conjectured that there had been ships here, but that they had gone away on seeing us.

'About noon of the 2nd of February we sent our yawl on shore, in which was Captain Dover, Mr. Fry, and six men, all armed; and in the meantime we and the *Duchess* kept turning in, and such heavy squalls came off the land that we had to let fly our top-sail sheets, keeping all hands to stand by our sails, lest the winds should blow them away. These flaws proceed from the land, which is very high in the middle of the island; but when they passed by we had little or no wind. As our yawl did not return, we sent the pinnance well armed to see what had occasioned the yawl to stay, being afraid there might be a Spanish garrison on the island, who

might have seized her and our men. Even the pinnance delayed returning, on which we put up the signal for her to come back, when she soon came off with abundance of crayfish, bringing also a man clothed in goat skins, who seemed wilder than the original owners of his apparel. His name was *Alexander Selkirk*, a Scotsman, who had been left here by Captain Stradling of the *Cinque-Ports*, and had lived alone on the island for four years and four months. Captain Dampier[1] told me he had been Master of the *Cinque-Ports*, and was the best man in that vessel; so I immediately agreed with him to serve as a mate on the *Duke*. During his stay he had seen several ships pass by, but only two came to anchor at the island, which he found to be Spanish, and therefore retired from them, on which they fired at him, but he escaped into the woods. Had they been French he would have surrendered to them; but chose rather to run the risk of dying alone on the island than fall into the hands of the Spaniards, as he suspected they would either put him to death, or make him a slave in their mines. The Spaniards had landed before he knew what they were, and came so near him that he had much ado to escape; for they not only shot at him, but pursued him into the woods, where he climbed up a tree, at the foot of which some of them made water and killed several goats, yet went away without discovering him.

'He told us he was born in Largo, in the county of Fife, Scotland, and was bred a sailor from his youth. The reason of his being left there was a difference with Captain Stradling, which, together with the ship being leaky, made him at first rather willing to stay here than to continue in the ship; and when at last he was inclined to have gone, the captain would not receive him. He had been at the island before to wood and water, when two of the men were left upon it for six months, the ship being chased away by two French South Sea ships; but the *Cinque-Ports* returned and took them off, at which time he was left. He had with

[1] Selkirk had been sailing-master under Captain Dampier in his expedition which left in May, 1703, and had been put ashore on the island at his own request. Dampier's expedition was unsuccessful, and 'the merchants were so sensible of his want of conduct, that they resolved never to trust him any more with a command'.

him his clothes and bedding, with a firelock and some powder and bullets, some tobacco, a knife, a kettle, a bible, with some other books, and his mathematical instruments. He diverted himself and provided for his sustenance as well as he could; but had much ado to bear up against melancholy for the first eight months, and was sore distressed at being left alone in such a desolate place. He built himself two huts of pimento trees, thatched with long grass and lined with goat skins, killing goats as he needed them with his gun so long as his powder lasted, which was only about a pound at first. When all this was spent he procured fire by rubbing two sticks of pimento wood together. He slept in his larger hut and cooked his victuals in the smaller, which was at some distance, and employed himself in reading, praying, and singing psalms, so that he said he was a better Christian during his solitude than he ever had been before, and than, as he was afraid, he would ever be again.

'At first he never ate but when restrained by hunger, partly from grief, and partly for want of bread and salt. Neither did he then go to bed till he could watch no longer, the pimento wood serving him both for fire and candle, as it burned very clear and refreshed him by its fragrant smell. He might have had fish enough, but would not eat them for want of salt, as they occasioned a looseness; except crayfish, which are as large as lobsters and are very good. These he sometimes boiled, and at other times broiled, as he did his goat's flesh, of which he made good broth, for they are not so rank as our goats. Having kept an account, he said he had killed 500 goats while on the island, besides having caught as many more, which he marked on the ear and let them go. When his powder failed he ran down the goats by speed of foot; for his mode of living with continual exercise of walking and running cleared him of all gross humours, so that he could run with wonderful swiftness through the woods and up the hills and rocks, as we experienced in catching goats for us. We had a bull-dog which we sent along with several of our nimblest runners to help in catching the goats, but he outstripped our dog and men, caught the goats, and brought them to us on his back. On one occasion his agility in pursuing a goat nearly cost him

his life ; as while pursuing it with great eagerness he caught hold of it on the brink of a precipice, of which he was not aware, being concealed by bushes, so that he fell with the goat down the precipice to a great depth, and was so bruised and stunned by the fall that he lay senseless, as he supposed, for twenty-four hours, and when he recovered his senses found the goat dead under him. He was then scarcely able to crawl to his hut about a mile distant, and could not stir out again for ten days.

'He came at length to relish his meat well enough without bread and salt. In the proper season he had plenty of good turnips, which had been sowed there by Captain Dampier's men, and had now spread over several acres of ground. He had also abundance of cabbage from the cabbage-palms, and seasoned his food with the fruit of the pimento, which is the same with Jamaica pepper, and has a fine flavour. He found also a species of black pepper called *malageta*, which was good for expelling wind and curing gripes.

'He soon wore out his shoes and other clothes by running in the woods, and being forced to shift without them, his feet became so hard that he ran about everywhere without inconvenience, and it was some time after he came to us before he could wear shoes, as his feet swelled when he first began to wear them.

'After he had got better of his melancholy he sometimes amused himself with carving his name on the trees, together with the date of his being there, and the time of his solitary residence.

'At first he was much distressed with cats and rats, which had bred there in great numbers from some of each species which had got on shore from ships that had wooded and watered at the island. The rats gnawed his feet and clothes when he was asleep, which obliged him to cherish the cats by feeding them with goat's flesh, so that many of them became so tame that they used to lie beside him in hundreds, and soon delivered him from the rats. He also tamed some kids, and for his diversion would at times sing and dance with them and his cats ; so that by the favour of Providence and the vigour of his youth—for he was now only thirty years of age—he came at length to conquer all the inconveniences of his solitude and to be quite easy in his mind.

'When his clothes were worn out he made himself a coat and a cap of goat skin, which he stitched together with thongs of the same, cut out with his knife.'

Subsequently the expedition sacked the two cities of Guaiaquil, in the assault on which Dover led the van. They took several prizes and cruised about the coast from Peru to California waiting for treasure ships. Of one of the largest prizes, which they named the *Bachelor*, after the Bristol Alderman doubtless, Dover took command as chief captain. They then sailed across the Pacific to Batavia, where they refitted, and in October, 1710, sailed for England, which was reached in 1711.

Captain Thomas Dover returned from the South Seas a wealthy man; the expedition had been unusually successful, having realized the enormous sum of £170,000. To Dover, who is stated to have been the owner of a very considerable part of both ships, fell a considerable share of the spoils. Alexander Selkirk as mate received £800 prize-money.

Harris (*Voyages*, &c.) makes the following comments on the voyage: 'It has been universally allowed by such as are proper judges of such expeditions that there never was any voyage of this nature so happily adjusted, so well provided in all respects, or in which the accidents that usually happen in Privateers were so effectually guarded against.' This he attributes to the abilities of the gentlemen of Bristol, and remarks that it was owing to this expedition that the spirit of privateering in the South Seas was not totally lost in England. The large sums realized had evidently made an enduring impression, and Harris adds, 'I might, perhaps, go too far should I assert that this voyage gave rise to the South Sea Company, but this much I can safely say, that the success of this voyage was what the patrons of

that Company chiefly insisted upon in their defence, when the plan of it was attacked as insufficient and chimerical.'

In 1712 Dover must have been fifty years of age, and quite ready to enjoy a period of leisure. Where he settled or what he did we do not know, but it is certain that three years such as he had spent at sea were no preparation for practice. Possibly he travelled, and in the introduction to *The Ancient Physician's Legacy* he scoffs at the doctors who have travelled 'far at home'; 'Let them take a trip to Hungary and see the mines,' speaking, and describing scenes, as though he had been there himself. He refers not infrequently to his wide knowledge of the globe, and in one place says, 'if travelling be necessary to make an accomplished physician, I am very sure that I have travelled more than all the physicians of Great Britain put together.'

In 1721, as mentioned by Munk, he was admitted Licentiate of the Royal College of Physicians, a qualification which enabled a man at that time to practise in and six miles round Westminster. It is doubtful how long he remained at this time in London; at any rate he states (*A. P. L.*) that he lived in Gloucestershire in the years 1728 and 1729. None of the cases which he mentions in his books are of this period. His permanent settlement dates from about 1731. In a 1733 edition of the *A. P. L.*, in replying to certain strictures on the use of quicksilver, he says, 'I challenge you to show when I have lost three patients for the past five years, when I was first called either in acute or chronic cases (though I have settled in town about eighteen months).' At this time Dover was well on in years, about or above seventy, a late age at which to begin practice in London.

To abet his laudable endeavours he resorted to the

time-honoured plan of writing a book. Of the popular or semi-popular treatises on medical subjects so common in those days, a few were by very able men. George Cheyne's *Essay on Health and Long Life* forms an exception to Latham's sweeping criticism on books of this class (quoted by W. A. Greenhill), 'They are all bad, and many dishonest.' A favourite plan was to write a treatise on some mineral water, lauding the virtues of a particular spa. Smollett, who knew so well the trials, vexations, and disappointments incident to beginning medical life in London, has sketched in strong lines the condition of the profession in the fourth and fifth decades of the century. He, too, had made an unsuccessful attempt to introduce himself in an *Essay on the External Use of Cold Water*, &c. Dr. L——n with his 'hotch-potch of erudition and extravagance', and the pedantic doctor in *Peregrine Pickle*, in whom he satirized the learned Dr. Akenside, were well-known types; while in Dr. Fathom the 'mystery' of the sons of Paean, as he terms them, is mercilessly exposed. Among the 'means used to force a trade'[1] Smollett mentions 'the insertion of cures by way of news in the daily papers', the erection of a 'hospital, lock, or infirmary, by the voluntary subscription of his friends; a scheme which had succeeded to a miracle with many of the profession, who had raised themselves into notice on the carcasses of the poor'. To understand Dover's relations with the apothecaries (to which subsequent reference will be made) the reader must know that they were the general practitioners of that day, and dispensed their own medicines, but in serious cases always called in a

[1] This seems to have been a stock phrase; Cheyne uses it in his *English Malady*, in an autobiographical note.

physician or a surgeon. Smollett's account of the practice 'parcelled out into small enclosures, occupied by different groups of personages', who tossed the ball [the patient] from one to another, would almost fit modern usage, in which a patient is sometimes tossed in a circle from specialist to specialist, until he returns with an inventory of his local woes to the consultant from whom he started. In Smollett's days the patient had to be content with three, except in the cases requiring a midwife. 'The apothecary being summoned, finds her ladyship in such a delicate situation that he declines prescribing, and advises her to send for a physician without delay. The nomination of course falls to him, and the doctor being called, declares the necessity of immediate venesection, which is accordingly performed by the surgeon of the association.'

While meriting the general criticism of Latham, the work with which Dover trusted to reach practice had many important qualifications for success. It appealed directly to the public in a taking way, not only in the main title, *The Ancient Physician's Legacy to His Country, being what he has collected himself in Forty-nine Years of Practice*, but in asserting that the diseases incident to mankind are described in so plain a manner '*that any person may know the nature of his own diseases; together with the several Remedies for each Distemper faithfully set down*'. It is expressly issued as a popular work on medicine, *Designed for the Use of all Private Families.*

The author's name is given, Thomas Dover, M.D., and the work was printed for the author and sold by A. Bellesworth and C. Hitch in Pater-Noster Row, &c. (giving the names of two other booksellers), 1732. Price, stitched, Five Shillings.

This is the title-page, date, &c., of the first edition, a copy of which is in the British Museum. In the *Dictionary of National Biography* the date of the first edition is given as 1733. The mistake is due to the fact that in this year appeared an edition of the *Legacy* not stated on the title-page to be a second edition. This is the earliest copy in the Library of the Royal Medical and Chirurgical Society, and in the Radcliffe Library. The name is spelt *Dovar*, and the title-page is different. Forty-nine years of practice are still claimed (not fifty), and it is stated that 'the extraordinary effects of mercury are more particularly considered'. After the author's name, Thomas Dovar, M.D., are the words, 'with remarks on the whole by a learned physician.' There is also a translation of a treatise on mercury 'by the learned Belloste'. It was printed for the relict of the late R. Bradley, F.R.S. The second and third editions I have not seen; this was probably one of them. The fourth and fifth editions also appeared in 1733; the sixth in 1742; the seventh in 1762, and the eighth, the last so far as I know, in 1771.

The Ancient Physician's Legacy, in the language of one of Dover's correspondents, 'made a great noise in London, and was the subject of almost every Coffee-house.'

It contains a description in plain language of about forty-two disorders, illustrated by cases, the majority of which are in some way made to attest the author's skill. The later editions abound in letters from grateful patients, extolling his virtues. The pictures of disease are scarcely such as might have been expected from a pupil of Sydenham. The account of consumption or 'phtisis', as he spells it, is very meagre, being as it is from the hand of a contemporary, possibly a friend, of

the author of the *Phthisiologia*. There are evidences throughout that the book was written 'for revenue purposes only', and the spirit of the buccaneer was not dead in the old man, as no occasion is missed either to blow his own trumpet, or to tilt a lance at his colleagues. 'Let me but come to People as early in this Distemper (dropsy) as they generally apply for relief from other Physicians, and it shall be cured,' &c.

On page 18, in the section on gout, is given the formula of his famous powder. 'Take Opium one ounce, Salt-Petre and Tartar vitriolated each four ounces, Ipocacuana one ounce. Put the Salt-Petre and Tartar into a red hot mortar, stirring them with a spoon until they have done flaming. Then powder them very fine; after that slice in your opium, grind them to a powder, and then mix the other powders with these. Dose from forty to sixty or seventy grains in a glass of white wine Posset going to bed; covering up warm and drinking a quart or three pints of the Posset—Drink while sweating.' The same formula is repeated in all the editions. He says that some apothecaries have desired their patients to make their wills and settle their affairs before they venture upon so large a dose as from forty to seventy grains. 'As monstrous as they may represent this, I can produce undeniable proofs where a patient of mine has taken no less a quantity than an hundred grains, and yet has appeared abroad the next day.'

In the treatment of fevers he follows the practice of the 'good Dr. Sydenham', for whose memory he professes 'the greatest veneration'. 'In this Distemper as in all other Fevers, I prescribe the cool Regimen, which must be followed in case Mankind prefer *Life* to Death; Ease to Pain; a short Fit of Illness to a long and tedious one; a good to a broken and shattered

constitution, laying aside Blisters and all heating and poisonous Powders.' In another place he says, 'I would have cold bathing grow as universal as inoculation.' He waxes furious against the 'Unhuman Method of Blistering', and invokes the authority of Radcliffe and 'the honest Dr. Sydenham' against it. When living with Dr. Sydenham, Dover had small-pox. In the beginning he lost twenty-two ounces of blood and had a vomit. He went abroad until he was blind, and then took to bed. 'I had no fire allowed in my room, my windows were constantly open, my bed-clothes were ordered to be laid no higher than my waist. He made me take twelve bottles of small beer acidulated with spirit of vitriol every twenty-four hours.' The experiences of his travels are referred to frequently, and he mentions Asia, the East and West Indies, and Hungary, in connexion with special points in practice. There is an account of the plague among the sailors of the *Duke* and *Duchess*, 'when I took by storm the two cities of Guaiaquil, under the line, in the South Seas.'

The 'Ancient Physician's' chief legacy to his country was quicksilver, which was his specific in almost every disease, and the use of which is vaunted in a most forcible manner in letters from patients. He ordered an ounce or an ounce and a quarter of crude mercury daily, believing that it freed the patient from all vermicular diseases, opened all obstructions, and made a pure balsam of the blood. A Captain Harry Coit, who had lived by the doctor's direction 'on Asses milk, Syrup of Snails and such stuff', took for his cough and shortness of breath an ounce a day, and took altogether an hundred and twenty pounds' weight. Dover says that he was called in derision, *The Quicksilver Doctor*. The *Legacy* stirred up an active pamphlet war, and for

twenty years or more the merits of crude mercury were much discussed.

If Dover's object in writing the work was to gain publicity, he could not have taken a better way than in his sharp comments on the physicians and apothecaries. The latter he assaults in terms which must have tickled the frequenters of the coffee-houses, among whom we are told the book made such a noise. 'I never affronted any apothecary, unless in ordering too little Physic; and curing a patient too soon, is, in their Way of Thinking, an unpardonable Crime. I must confess, I never could bring an Apothecary's Bill to three pounds in a fever; whereas I have known some of their bills in this disease amount to forty, fifty, and sixty Pounds. If they can't cure with less charges, I can't forbear saying, That I have the same opinion of their Integrity as I have of their Understanding.' The doctrine of the apothecary was that, '*'Tis your Writing-Physician only who has a Title to a Fee.*' Dover takes strong and most reasonable ground against the constant varying of prescriptions when there is no occasion for it. The hostility of the apothecaries to him, according to his own account, arose from his being 'always inviolably attached to the Interest and Welfare of my patient and entirely regardless of these Gentlemen's unwarrantable Gains'. These attacks did not pass unnoticed, and in 1733 H. Bradley, Surgeon, criticizes *The Ancient Physician's Legacy*, and makes some 'animadversions on his scurrillous Treatment of the Professors of Physic in general; with a word or two on the uselessness of his *Legacy* to all Private Families'.

Daniel Turner, 'of the College of Physicians,' who in the same year impartially surveys *The Ancient*

Physician's Legacy, refers to the Guaiaquil incident in the following terms: 'I think the Doctor had much better have left out his Bravado of having taken two cities by storm, unless he thinks it an honour to a Physician to kill and slay, and after to plunder the Innocent, those who never wronged him, and to carry off the spoil; a good prelude, this, to the blood shed after among his own men.' (Dover had had them bled copiously for the plague.) Turner hints that Dr. D——r's quicksilver did not a little to hasten the end of the celebrated tragedian, Barton Booth, to whom he had given, between May 3 and 8, within two ounces of two pounds of mercury.

Like his master, Dover's only affiliation with the Royal College of Physicians was through the minimum qualification of the licence. Sydenham and Morton, the two most distinguished English clinical physicians of the seventeenth century, were regarded as innovators and 'sectaries' by the heads of the College, who, as Sydenham remarks, took fire at his attempts to reduce practice to greater easiness and plainness. The coolness and moderation of the Master were not imitated by the 'Ancient Physician', who in the sixth edition attacks the gentlemen of the faculty, and warns unwary people 'not to take every Graduate for a Physician, nor a clan of prejudiced Gentlemen for Oracles'. He added to his *Legacy* the *Statuta Moralia*, or as he terms it on the title-page, 'the moral conversation of the College of Physic, in Latin and English, by way of Appendix, together with a Digression.' Dover affirms boldly that the whole purport of the 'Conversation' is to conceal their ignorance and to deceive their miserable patients, but he avers his desire is 'more to do justice to Mankind than to irritate and

provoke a Set of Gentlemen who, like moles, work under ground, lest their Practices should be discovered to the Populace.' He again refers to the relations of the apothecaries with the physicians in the following terms:

'The Apothecaries, generally speaking, have it in their Power to recommend the Physician, which is the wrongest Step the Patient can possibly take: The Physician, to gratify the Apothecary, thinks himself obliged to order ten times more Physic than the Patient really wants, by which means he often ruins his Constitution, and too often his Life; otherwise how is it possible an Apothecary's Bill in a Fever, should amount to Forty or Fifty, or more Pounds? Nay, I have been creditably inform'd that several of those Apothecaries have declared they would never call in a Physician, but what should put in Fifteen or Twenty Shilling a Day into their Pockets: What must the Conscience of such Physicians be, that would forfeit their reputation and every thing that is dear to them, by cheating for others? I would venture to say, Neither Sydenham's nor Radcliff's Bills did ever amount to Forty Shillings in a Fever, and yet they recover'd their Patients without the Rule, at present prescribed, of Vomiting, Bleeding, and multiplying Blisters in all Cases whatsoever; so since this is to be their Rule of Practice, they are very indifferent in their Enquiries what the Patient's Disease is.'

Dover continued to practise in London, and in the seventh edition of *The Ancient Physician's Legacy* there is a letter to him from Catherine Hood, dated November 6, 1738, in which she speaks of having consulted him in 1737.

His reputation seems to have extended to the Continent, for in the *Opera Omnia* of Ballonius, edited by Professor Tronchin, of Geneva, 1762, there is a most laudatory dedication, in which he is extolled as one of the most distinguished physicians of the time.

In 1742 appeared the sixth edition of the *Legacy*, which must have been issued by the author, as he speaks on the title-page of fifty-eight years of practice. He is stated by Munk to have died in 1741 or 1742, probably the latter, but his name does not appear in the register of deaths in the *Gentleman's Magazine* in either of those years.

Doubtless the old buccaneer, described as 'a man of rough temper, who could not easily agree with those about him', was a striking figure as he passed along the Strand to the Jerusalem Coffee House, where he saw his patients. A good fighter, a good hater, as alas! so many physicians have been, his weaknesses and evil behaviour we may forget, but Captain Thomas Dover, who, on the 2nd of February, 1710, found 'Robinson Crusoe', the world should not forget; and we also of his craft have cause daily to remember with gratitude the student and friend of the great Sydenham, who had the wit, in devising a powder, to remember his master's injunction: *Sine papaveribus, sine opiatis et medicamentis ex iis confectis, manca et clauda esset medicina.*

JOHN KEATS

THE APOTHECARY POET[1]

We have the very highest authority for the statement that 'the lunatic, the lover, and the poet, are of imagination all compact'. In a more comprehensive division, with a keener discernment, Plato recognizes a madness which is not an evil, but a divine gift, and the source of the chiefest blessings granted to men. Of this divine madness poetry occupies one of the fourfold partitions. Here is his definition: 'The third kind is the madness of those who are possessed by the Muses; which, taking hold of a delicate and virgin soul, and there inspiring frenzy, awakens lyrical and all other numbers; with these adorning the myriad actions of ancient heroes for the instruction of posterity. But he who, having no touch of the Muses' madness in his soul, comes to the door and thinks that he will get into the temple by the help of art—he, I say, and his poetry are not admitted; the sane man disappears and is nowhere when he enters into rivalry with the madman.'

Here, in a few words, we have expressed the very pith and marrow of the nature of poetry, and a clearer distinction than is drawn by many modern writers of the relation of the art to the spirit, of the form to the thought. By the help of art, without the Muses' mad-

[1] Read at the *Johns Hopkins Historical Club*, October 29, 1895. Reprinted from the *Johns Hopkins Hospital Bulletin*, No. 58, January, 1896.

ness, no man enters the temple. The poet is a 'light and winged and holy thing', whose inspiration, genius, faculty, whatever we may choose to call it, is allied to madness—he is possessed or inspired. Oliver Wendell Holmes has expressed this very charmingly in more modern terms, speaking of his own condition when composing the *Chambered Nautilus*. 'In writing the poem I was filled with a better feeling, the highest state of mental exaltation and the most crystalline clairvoyance that had ever been granted to me—I mean that lucid vision of one's thought and all forms of expression which will be at once precise and musical, which is the poet's special gift, however large or small in amount or value.'[1] To the base mechanical of the working-day world, this lucid vision, this crystalline clairvoyance and mental exaltation is indeed a madness working in the brain, a state which he cannot understand, a Holy of Holies into which he cannot enter.

I

When all the circumstances are taken into account, the English Parnassus affords no parallel to the career of Keats—Adonais, as we love to call him—whose birthday, one hundred years ago, we celebrate to-day.

Born at the sign of the 'Swan and Hoop', Moorgate Pavement, the son of the head ostler, his parentage and the social atmosphere of his early years conspired to produce an ordinary beer-loving, pugnacious cockney; but instead there was fashioned one of the clearest, sweetest, and strongest singers of the century, whose advent sets at naught all laws of heredity, as his development transcends all laws of environment.

[1] In a private letter which is published in a notice of Dr. Holmes, *Johns Hopkins Hospital Bulletin*, October, 1894.

Keats's father succeeded to 'Mine Host of the Swan and Hoop', but died when the poet was only eight years old. His grandmother was in comfortable circumstances, and Keats was sent to a school at Enfield, kept by the father of Charles Cowden Clarke. Here among other accomplishments he developed his knuckles, and received a second-hand introduction to the Greek Pantheon. He is described by one of his schoolfellows as 'the pet prize-fighter with terrier courage', but in the last two years at school he studied hard and took all the prizes. The influence of the Clarkes upon Keats was strong and formative, particularly that of the younger one, Charles Cowden, who was an usher in the school. In the poem addressed to him he frankly acknowledges this great debt, 'you first taught me all the sweets of song.'

In 1810 his mother died of consumption, and during a long illness Keats nursed her with incessant devotion.

On the completion of his fifteenth year he was removed from school and apprenticed to Mr. Hammond, a surgeon at Edmonton. The terms of the old indenture as surgeon's apprentice are quaint enough. I have one of my uncle, Edward Osler, dated 1811. The surgeon, for a consideration of £40, without board, undertook the care and education for five years of the apprentices, of whom there were often four or five. The number of specific negatives in the ordinary indenture indicates the rough and ready character of the Tom Sawyers of that date. The young apprentice promised not 'to haunt taverns or playhouses, not to play at dice or cards, nor absent himself from his said master's service day or night unlawfully, but in all things as a faithful apprentice he shall behave himself

towards his said master and all his during the said term'.

We know but little of the days of Keats's apprenticeship. A brother student said, 'he was an idle, loafing fellow, always writing poetry.' In 1814, in the fourth year of his indenture, the pupil and master had a serious quarrel, and the contract was broken by mutual consent. It would appear from the following sentence in a letter to his brother, that more than words passed between them: 'I daresay you have altered also—every man does—our bodies every seven years are completely fresh material'd. Seven years ago it was not this hand that clinch'd itself against Hammond.'[1]

At the end of the apprenticeship the student 'walked' one of the hospitals for a time before presenting himself at the College of Surgeons or the Apothecary's Hall. Keats went to the, at that time, United Hospitals of Guy's and St. Thomas, where he studied during the sessions of 1814–15 and 1815–16. He became a dresser at Guy's in the latter year under Mr. Lucas, and on July 25, 1816, he passed the Apothecary's Hall. The details of Keats's life as a medical student are very scanty. In after years one or two of his fellow students placed on record their impressions of him. He does not seem to have been a very brilliant student. Poetry rather than surgery was followed as a vocation; one of his fellow students says, 'all other pursuits were to his mind mean and tame.' Yet he acquired some degree of technical skill, and performed with credit the minor operations which fell to the hand of a dresser. He must have been a fairly diligent student to have obtained even the minimum qualifications of the 'Hall' before

[1] The extracts are taken from the edition of the *Letters* by Mr. Buxton Forman. Reeves and Turner, London, 1895.

the completion of his twenty-first year. In the *Biographical History of Guy's Hospital* Dr. Wilks states that Sir Astley Cooper took a special interest in Keats.

What attraction could the career of an apothecary offer to a man already much 'travelled in the realms of gold', who was capable at twenty of writing such a sonnet as that on Chapman's *Homer*? So far as we know he never practised or made any effort to get established; and in 1817 he abandoned the profession, apparently not without opposition. In a letter to his friend Brown, dated September 23, 1819, he says, 'In no period of my life have I acted with any self-will but in throwing up the apothecary profession.'

During the next four years he led, to use his own words, 'a fitful life, here and there, no anchor.' While a student he had made friends in a literary circle, of which Leigh Hunt and Haydon, the artist, were members, and he had a number of intimates—Brown, Taylor, Bailey, Dilke, and others—among the coming men in art and science. From his letters to them, to his brother George (who had emigrated with his wife to America), and to his sister Fanny, we glean glimpses of his life at this period. His correspondence reveals, too, so far as it can, the man as he was, his aspirations, thoughts, and hopes.

II

The spirit of *negative capability* dominated these years—the capability, as he expresses it, 'of being in uncertainties, mysteries, doubts, without any irritable searching after fact and reason.' The native hue of any resolution which he may have entertained—and we shall learn that he had such—was soon sicklied o'er, and he lapsed

into idleness so far as any remunerative work was concerned. A practical woman like Mrs. Abbey, the wife of the trustee of his mother's estate, condoned his conduct with the words 'the Keatses were ever indolent, that they would ever be so, and that it was born in them'. In a letter to his brother he uses the right word. Here is his confession:

'This morning I am in a sort of temper, indolent and supremely careless—I long after a stanza or two of Thomson's *Castle of Indolence*—my passions are all asleep from my having slumbered till nearly eleven and weakened the animal fibre all over me to a delightful sensation about three degrees this side of faintness. If I had teeth of pearl and the breath of lilies, I should call it languor; but as I am, especially as I have a black-eye, I must call it laziness. . . . This is the only happiness and is a rare instance of the advantage of the body overpowering the mind.'

The gospel of 'living' as against that of 'doing', which Milton preached in the celebrated sonnet on his blindness, found in Keats a warm advocate. 'Let us not, therefore,' he says, 'go hurrying about and collecting honey, bee-like buzzing here and there for a knowledge of what is not to be arrived at, but let us open our leaves like a flower, and be passive and receptive, budding patiently under the eye of Apollo, and taking truths from every noble insect that favours us with a visit.' Fatal to encourage in an active man of affairs, this dreamy state, this passive existence, favours in 'bards of passion and of mirth' the development of a fruitful mental attitude. The dreamer spins from his 'own inwards his own airy citadel'; and as the spider needs but few points of leaves and twigs from which to begin his airy circuit, so, Keats says, 'man should be content with as few points to tip with the fine web of his soul, and weave a tapestry empyrean, full of

symbols for his spiritual eye, of softness for his spiritual touch, of space for his wanderings, of distinctness for his luxury.' All the while Keats was 'budding patiently', feeling his powers expand, and with the 'viewless wings of Poesy' taking ever larger flights. An absorption in ideals, a yearning passion for the beautiful, was, he says, his master-passion. Matthew Arnold remarks it was with him 'an intellectual and spiritual passion. It is "connected and made one" as Keats declares that in his case it was "with the ambition of the intellect".' It is, as he again says, the 'mighty abstract Idea of Beauty in all things'. Listen to one or two striking passages from his letters: 'This morning Poetry has conquered,—I have relapsed into those abstractions which are my only life.' 'I feel more and more every day, as my imagination strengthens, that I do not live in this world alone, but in a thousand worlds. No sooner am I alone than shapes of epic greatness are stationed round me, and serve my spirit the office which is equivalent to a King's body-guard. Then "Tragedy with scepter'd pall comes sweeping by".' 'What the imagination seizes as beauty must be truth'—the expression in prose of his ever memorable lines,

> Beauty is truth, truth beauty,—that is all
> Ye know on Earth, and all ye need to know.

III

Keats's first published work, a small volume of poems issued in 1817, contained the verses written while he was a student and before he had abandoned the profession. With the exception of one or two small pieces it contained nothing of note. The sonnet on Chapman's *Homer*, written while he was a pupil at Guy's, was the

most remarkable poem of the collection. In 1818 appeared *Endymion*, a poetic romance, an ambitious work, which, in the autumn of the year, was mercilessly 'cut up' in the *Quarterly* and in *Blackwood*. Popularly these reviews are believed to have caused Keats's early death—a belief fostered by the jaunty rime of Byron:

> 'Tis strange the mind, that very fiery particle,
> Should let itself be snuffed out by an article.

The truth is, no event in Keats's life so warmly commends him to us, or shows more clearly the genuine robustness of his mind, than his attitude in this much-discussed episode. In the first place, he had a clear, for so young a man an extraordinarily clear, perception of the limitation of his own powers and the value of his work. The preface to *Endymion*, one of the most remarkable ever written, contains his own lucid judgement. He felt that his foundations were 'too sandy', that the poem was an immature, feverish attempt, in which he had moved, as he says, from the leading-strings to the go-cart. Did any critic ever sketch with firmer hand the mental condition of a young man in transition? 'The imagination of a boy is healthy, and the mature imagination of a man is healthy; but there is a space of life between, in which the soul is in a ferment, the character undecided, the way of life uncertain, the ambition thick-sighted; thence proceeds mawkishness, and all the thousand bitters which those men I speak of must necessarily taste in going over the following pages.' It cannot be denied that there are in *Endymion*, as the *Quarterly Review* puts it, 'the most incongruous ideas in the most uncouth language,' but the poem has lines of splendid merit, some indeed which have passed into the daily life of the people.

Naturally the criticism of the *Quarterly* and of *Black-*

wood rankled deeply in his over-sensitive heart, but after the first pangs he appears to have accepted the castigation in a truly philosophic way. In a letter to his friend Hersey, dated Oct. 9, 1818, he writes, 'Praise or blame has but a momentary effect on the man whose love of beauty in the abstract makes him a severe critic in his own works. My own domestic criticism has given me pain without comparison beyond what *Blackwood* or the *Quarterly* could possibly inflict,—and also when I feel I am right, no external praise can give me such a glow as my own solitary reperception and ratification of what is fine. J. S. is perfectly right in regard to the slipshod *Endymion*. That it is so is no fault of mine. No!—though it may sound a little paradoxical, it is as good as I had power to make it—by myself.' And he adds, 'I will write independently,—I have written independently *without judgment*. I may write independently, and *with judgment* hereafter. The Genius of Poetry must work out its own salvation in a man.' A young man of twenty-three who could write this, whatever else he possessed, had the *mens sana*, and could not be killed by a dozen reviews.

In June, 1820, appeared Keats's third work, *Lamia, Isabella, The Eve of St. Agnes, and other poems*, which placed him in the first rank of English writers. I will quote briefly the criticisms of two masters.

'No one else in English poetry save Shakespeare,' says Matthew Arnold, 'has in expression quite the fascinating facility of Keats, his perfection of loveliness. "I think," he said humbly, "I shall be among the English poets after my death." He is; he is with Shakespeare.'

Lowell, speaking of his wonderful power in the choice of words, says:

'Men's thoughts and opinions are in a great degree the vassals of him who invents a new phrase or re-applies an old one. The thought or feeling a thousand times repeated becomes his at last who utters it best. . . . As soon as we have discovered the word for our joy or our sorrow we are no longer its serfs, but its lords. We reward the discoverer of an anaesthetic for the body and make him a member of all the societies, but him who finds a nepenthe for the soul we elect into the small Academy of the Immortals.'

And I will add a criticism on the letters by Edward Fitzgerald:

'Talking of Keats, do not forget to read Lord Houghton's *Life and Letters* of him; in which you will find what you may not have guessed from his poetry (though almost unfathomably deep in that also), the strong masculine sense and humour, etc., of the man; more akin to Shakespeare, I am tempted to think, in a perfect circle of poetic faculties, than any poet since.'

IV

Very few indications of his professional training are to be found in Keats's letters; fewer still in the poems. Referring to his studies, he says, in one of the early poems (the epistle to George Felton Mathew), 'far different cares beckon me sternly from soft Lydian airs.' During the four years from 1817 to 1820 he made fitful efforts to bestir himself into action, and on several occasions his thoughts turned toward his calling. In a letter to his brother, written in February, 1819, he says, 'I have been at different times turning it in my head whether I should go to Edinburgh and study for a physician; I am afraid I should not take kindly to it; I am sure I could not take fees—and yet I should like to do so; it is not worse than writing poems and hang-

ing them up to be fly-blown on the *Review* shambles.' In 1818 he wrote to his friend Reynolds, 'Were I to study physic, or rather medicine, again, I feel it would not make the least difference in my poetry; when the mind is in its infancy a bias is in reality a bias, but when we acquire more strength, a bias becomes no bias,' adding that he is glad he had not given away his medical books, 'which I shall again look over, to keep alive the little I know thitherwards.' In May, 1820, when convalescent from the first attack of haemoptysis, he wrote to Dilke, 'I have my choice of three things—or at least two—South America or surgeon to an Indiaman, which last will be my fate.' A year before, in a letter to Miss Jeffreys, he spoke of voyaging to and from India for a few years, but in June, 1819, he tells his sister that he has given up the idea of an Indiaman, and that he 'was preparing to enquire for a situation with an apothecary'. Allusions to or analogies drawn from medical subjects are rare in his letters. In one place, in writing from Devonshire, he says, 'When I think of Wordsworth's sonnet, "Vanguard of Liberty! Ye men of Kent!" (in Wordsworth at all events) the degraded race about me are *pulvis ipecac. simplex*—a strong dose.'

He played a medical prank on his friend Brown, who had let his house to a man named Nathan Benjamin. The water which furnished the house was in a tank lined with lime, which impregnated the water unpleasantly. Keats wrote the following short note to Brown:

Sir,—By drinking your damn'd tank water I have got the gravel. What reparation can you make to me and my family?

NATHAN BENJAMIN.

Brown accordingly surprised his tenant with the following answer:

Sir,—I cannot offer you any remuneration until your gravel shall have formed itself into a stone, when I will cut you with pleasure.

C. Brown.

In a letter to James Rice he tells one of the best maternal impression stories extant: 'Would you like a true story? There was a man and his wife who, being to go a long journey on foot, in the course of their travels came to a river which rolled knee-deep over the pebbles. In these cases the man generally pulls off his shoes and stockings and carries the woman over on his back. This man did so. And his wife being pregnant, and troubled, as in such cases is very common, with strange longings, took the strangest that ever was heard of. Seeing her husband's foot, a handsome one enough, looked very clean and tempting in the clear water, on their arrival at the other bank she earnestly demanded a bit of it. He being an affectionate fellow, and fearing for the comeliness of his child, gave her a bit which he cut off with his clasp-knife. Not satisfied, she asked for another morsel. Supposing there might be twins, he gave her a slice more. Not yet contented, she craved another piece. "You wretch," cries the man, "would you wish me to kill myself? Take that," upon which he stabbed her with the knife, cut her open, and found three children in her belly: two of them very comfortable with their mouths shut, the third with its eyes and mouth stark staring wide open. "Who would have thought it!" cried the widower, and pursued his journey.'

The estate of Keats's mother was greatly involved, and it does not appear that he received much from the

trustee, Mr. Abbey. His books were not successful, and having no love for the ordinary hack work in literature, he was largely dependent upon the bounty of his friends, from whom in several of the letters the receipt of money is acknowledged. Who could resist a charming borrower who could thus write: 'I am your debtor; I must ever remain so; nor do I wish to be clear of my rational debt; there is a comfort in throwing oneself on the charity of one's friends—'tis like the albatross sleeping on its wings. I will be to you wine in the cellar, and the more modestly, or rather, indolently I retire into the backward bin, the more Falerne will I be at the drinking.' We must remember, however, that Keats had reasonable expectations. He says to Haydon, December 23, 1818, 'I have a little money, which may enable me to study and to travel for three or four years.' He had enough wisdom to try to be 'correct in money matters and to have in my desk', as he says, 'the chronicles of them to refer to and to know my worldly non-estate.'

To the worries of uncertain health and greatly embarrassed affairs there were added, in the summer of 1819, the pangs, one can hardly say of disprized, but certainly of hopeless love. Writing to his friend Reynolds, May 3, 1818, in comparing life to a large mansion of many apartments, he says pathetically that he could only describe two; the first, the Infant or Thoughtless Chamber, in which we remain as long as we do not think; and the second, the Chamber of Maiden-Thought, in which at first we become intoxicated with the light and atmosphere, until it gradually darkens and we see not well the exit and we feel the 'burden of the mystery'. For his friends he hopes the third Chamber of Life may be filled with the wine of love and the bread of friendship.

Poor fellow! Within a year the younger Aphrodite, in the shape of Fanny Brawne, beckoned to him from the door of this third chamber. Through her came no peace to his soul, and the Muses' inspiration was displaced by a passion which rocked him as the 'winds rock the ravens on high'—by Plato's fourth variety of madness, which brought him sorrow and 'leaden-eyed despair'. The publication of Keats's letters to Fanny Brawne can be justified; it must also be regretted. While there are some letters which we should be loath to miss, there are others the publication of which has wronged his memory. Whether of a young poet as Keats, or of an old philosopher as Swift, such maudlin cooings and despairing wails should be ruled out of court with the writings of paranoiacs.

V

Keats's mother died of consumption in 1810. In the winter of 1817–18 he nursed his brother Tom through the same disease. In the spring they spent several months together in Devonshire, which Keats compares to Lydia Languish, 'very entertaining when it smiles, but cursedly subject to sympathetic moisture.' In the summer he took a trip through Scotland, and in the Island of Mull caught a cold, which settled in his throat. In a letter dated Inverness, August 6, he speaks of his throat as in 'a fair way of getting quite well'. On his return to Hampstead we hear of it again; and in September he writes 'I am confined by Sawrey's mandate in the house now, and have as yet only gone out in fear of the damp night'. During the last three months of the year he again nursed his brother Tom, who died in December. From this time the continual references

to the sore throat are ominous. On December 31 he complains to Fanny Keats that a sore throat keeps him in the house, and he speaks of it again in January letters. In a February letter to his sister he says that the sore throat has haunted him at intervals for nearly a twelvemonth. In June and July he speaks of it again, but the summer spent in the Isle of Wight and at Winchester did him good, and in September he writes to one of his friends that he had got rid of his 'haunting sore throat'. I have laid stress upon this particular feature, as there can be but little question that the tuberculosis of which he died began, as is common enough, with this localization. For more than a year there had been constant exposure while nursing his brother, and under conditions, in Devonshire at least, most favourable to infection. The depression of the *Review* attacks in the autumn of 1818 must also be taken into account. Through the summer of 1818 there are occasional references to an irritable state of health apart from the throat trouble—unfitting him for mental exertion. 'I think if I had a free and healthy and lasting organization of heart and lungs as strong as an ox's, so as to bear unhurt the shock of an extreme thought and sensation without weariness, I could pass my life very nearly alone, though it should last eighty years. But I feel my body too weak to support me to the height, I am obliged continually to check myself and be nothing.' If we may judge by the absence of any references in the letters, the autumn of the year was passed in good health, but on December 20 he wrote that he was 'fearful lest the weather should affect my throat, which on exertion or cold continually threatens me'.

On February 3 the smouldering fires broke out, after he had been exposed in a stage ride, in an attack of

haemoptysis. From this date we can trace in the letters the melancholy progress of the disease. In April and May the lung symptoms became less pronounced, and in spite of much nervous irritability and weakness he was able to direct the publication of his third little volume of poems. On June 22 he had a return of the spitting of blood, which lasted several days. The serious nature of the disease was by this time evident to both the patient and his physicians. He acknowledges that it will be a long, tedious affair, and that a winter in Italy may be necessary. 'Tis not yet consumption,' he writes Fanny Keats, 'but it would be were I to remain in this climate all the winter.' This, too, was a time of terrible mental distress, as he became madly jealous of his best friend, C. A. Brown. The letters of this period to Fanny Brawne tell of the 'damned moments' of one who 'dotes yet doubts, suspects, yet fondly loves'.

Preparations were made for his journey to Italy, which he speaks of 'as marching up to a battery'. He sailed for Naples, which was reached after a tedious voyage about the end of October. Severn, the artist, accompanied him, and has given (*Atlantic Monthly*, April, 1863) a touching account of the last months of his friend's life. Realizing fully the hopelessness of his condition, like many a brave man in a similar plight, he wished to take his life. Severn states :

'In a little basket of medicines I had bought at Gravesend at his request there was a bottle of laudanum, and this I afterwards found was destined by him "to close his mortal career", when no hope was left, and prevent a long, lingering death, for my poor sake. When the dismal time came, and Sir James Clark was unable to encounter Keats's penetrating look and eager demand, he insisted on having the bottle, which I had

already put away. Then came the most touching scenes. He now explained to me the exact procedure of his gradual dissolution, enumerated my deprivations and toils, and dwelt upon the danger to my life, and certainly to my fortunes, from my continued attendance upon him. One whole day was spent in earnest representations of this sort, to which, at the same time that they wrung my heart to hear and his to utter, I was obliged to oppose a firm resistance. On the second day, his tender appeal turned to despair, in all the power of his ardent imagination and bursting heart.'[1]

In Rome, Keats was under the care of Dr. (afterwards Sir James) Clark, who, with Severn, watched him with assiduous care throughout the winter months. Unlike so many consumptives, Keats had none of the *spes phthisica*, which carries them hopefully to the very gates of the grave. He knew how desperate was his state. 'I feel,' he said, 'the flowers growing over me.' 'When will this posthumous life come to an end?' On February 14 he requested Severn to have inscribed on his gravestone the words,

Here lies one whose name was writ in water.

On February 27 he passed away quietly in Severn's arms.

All lovers of poetry cherish Keats's memory for the splendour of the verse with which he has enriched our literature. There is also that deep pathos in a life cut

[1] In similar circumstances one of the gentlest and most loving of men whom it has been my lot to attend was more successful, and when he realized fully that a slow, lingering death awaited him, took the laudanum with which for months he had been provided. In such a case, whose heart will not echo the kindly words with which Burton closes his celebrated section on suicide? 'Who knows how he may be tempted? It is his case; it may be thine. *Quae sua sors hodie est, cras fore vestra potest.* We ought not to be so rash and rigorous in our censures as some are; charity will judge and hope the best; God be merciful unto us all!'

off in the promise of such rich fruit. He is numbered among 'the inheritors of unfulfilled renown', with Catullus and Marlowe, with Chatterton and Shelley, whom we mourn as doubly dead in that they died so young.

It was with true prophetic insight that he wrote in 1818 to his brother George,

> What though I leave this dull and earthly mould,
> Yet shall my spirit lofty converse hold
> With after times.

Shelley, who was so soon to join this 'gentle band', and find with Keats 'a grave among the eternal', has expressed the world's sorrow in his noble elegy. I quote in conclusion his less well-known fragment:

> Here lieth one whose name was writ on water.
> But, ere the breath that could erase it blew,
> Death, in remorse for that fell slaughter,
> Death, the immortalizing winter, flew
> Athwart the stream,—and time's printless torrent grew
> A scroll of crystal, blazoning the name
> Of Adonais. . . .

OLIVER WENDELL HOLMES[1]

VERY fitting indeed is it that he who had lived to be 'the last leaf upon the tree' should have fallen peacefully in the autumn which he loved so well. Delightful, too, to think that although he had, to use the expression of Benjamin Franklin, intruded himself these many years into the company of posterity, the freshness and pliancy of his mind had not for a moment failed. Like his own wonderful 'one-hoss shay', the end was a sudden breakdown; and though he would have confessed, no doubt, to 'a general flavour of decay', there was nothing local, and his friends had been spared that most distressing of all human spectacles, those cold gradations of decay, in which a man takes nearly as long to die as he does to grow up, and lives a sort of death in life, '*ita sine vita vivere, ita sine morte mori.*'

Enough has been said, and doubtless well said, by those who make criticism their vocation, upon the literary position and affinities of Oliver Wendell Holmes, and I shall spare your perhaps already surcharged ears. He has been sandwiched in my affections these many years between Oliver Goldsmith and Charles Lamb. More than once he has been called, I think, the American Goldsmith. Certainly the great distinction

[1] Read at the *Johns Hopkins Medical Society*, October 15, 1894. Those interested in the medical life of Holmes will find an excellent article on the subject by Dr. J. Mason Knox in the *Johns Hopkins Hospital Bulletin*, February, 1907.

of both men lies in that robust humanity which has a smile for the foibles and a tear for the sorrows of their fellow creatures. The English Oliver, with a better schooling for a poet (had he not learned in suffering what he taught in song?), had a finer fancy and at his best a clearer note. With both writers one is at a loss to know which to love the better, the prose or the poetry. Can we name two other prose-writers of equal merit, who have so successfully courted the 'draggle-tailed Muses,' as Goldsmith calls them? Like Charles Lamb, Holmes gains the affections of his readers at the first sitting, and the genial humour, the refined wit, the pathos, the tender sensitiveness to the lights and shadows of life, give to the Breakfast Table Series much of the charm of the Essays of Elia.

While it is true that since Rabelais and Linacre no generation has lacked a physician to stand unabashed in the temple at Delos, a worshipper of worth and merit amid the votaries of Apollo, I can recall no name in the past three centuries eminent in literature—eminent, I mean, in the sense in which Goldsmith is eminent—which is associated in any enduring way with work done in the science and art of medicine. Many physicians, active practitioners—Sir Thomas Browne, for example—have been and are known for the richness and variety of their literary work; but, as a rule, those who have remained in professional life have courted the 'draggle-tailed Muses' as a gentle pastime, 'to interpose a little ease' amid the worries of practice. Few such have risen above mediocrity; fewer still have reached it. We know the names of Garth, of Arbuthnot, and of Akenside, but we neither know them nor their works. The list is a long one, for the rites

of Apollo have always had a keen attraction for the men of our ranks, but the names fill at the best a place in the story of the literature of the country, not a place in the hearts and lives of the people. Far otherwise is it with a select group of men, Goldsmith, Crabbe and Keats, who, at the outset members of our profession, early broke away from its drudgery. In pride we claim them, though in reality no influence of their special studies is to be found in their writings. Two of these, at least, reached the pure empyrean, and to use Shelley's words, robed in dazzling immortality, sit on thrones

> built beyond mortal thought,
> Far in the Unapparent.

Oliver Wendell Holmes may not be placed in the same exalted sphere, but he will always occupy a unique position in the affections of medical men. Not a practitioner, he yet retained for the greater part of his active life the most intimate connexion with the profession, and as Professor of Anatomy at Harvard University kept in touch with it for nearly forty years. The festivals at Epidaurus were never neglected by him, and as the most successful combination which the world has ever seen of the physician and the man of letters, he has for years sat amid the Aesculapians in the seat of honour.

During the nineteenth century three schools in succession have moulded the thoughts and opinions of the medical profession in this country. In the early period English ways and methods prevailed, and (as in the colonial days) the students who crossed the Atlantic for further study went to Edinburgh or to London. Then came a time between 1825 and 1860 when American students went chiefly to Paris, and the pro-

medical machinery among the old, hard-working operatives; that they should for a while smile at its pretensions, and when its use began to creep in among them, that they should observe and signalize all the errors and defects which happened in its practical application.'

Gerhard's work on the diagnosis of diseases of the chest was published in 1836, and with this essay of Holmes's opened to the American profession the rich experience of the French school in the methods of direct exploration in all disorders of the chest and of the heart. The essay may be read to-day by the student with great profit; it is particularly rich in original references to the older writers. Readers of the *Autocrat* and of others of Holmes's literary works have been surprised at the readiness with which he quotes and refers to the fathers of the profession, a facility readily explained by these Boylston prize dissertations; and in their preparation he had evidently studied not only the modern authors of the day, but had read in the original the great masters from Hippocrates to Harvey.

The prize essay does not constitute the most enduring form of medical literature, and though the dissertation on Malaria is in some respects one of the very best of the long series of Boylston essays, yet we could scarcely have spoken of a medical reputation for Dr. Holmes had it to rest upon these earlier productions. A few years later, however, he contributed an article which will long keep his memory green in our ranks.

Child-bed fever was unhappily no new disorder when Oliver Wendell Holmes studied, nor had there been wanting men who had proclaimed forcibly its specific character and its highly contagious nature. Indeed, so far back as 1795, Gordon, of Aberdeen, not only

called it a specific contagion, but said he could predict with unerring accuracy the very doctors and nurses in whose practice the cases would develop. Rigby, too, had lent the weight of his authority in favour of the contagiousness, but the question was so far from settled that, as you will hear, many of the leading teachers scouted the idea that doctors and nurses could convey the disorder. Semmelweis had not then begun to make his interesting and conclusive observations, for which his memory has recently been so greatly honoured.

In 1843, before the Boston Society for Medical Improvement, Dr. Holmes read a paper entitled 'The Contagiousness of Puerperal Fever', in which he brought forward a long array of facts in support of the view that the disease was contagious, conveyed usually by the doctor or the nurse, and due to a specific infection. At the time there certainly was not an article in which the subject was presented in so logical and so convincing manner. As Sidney Smith says, it is not the man who first says a thing, but it is he who says it so long, so loudly, and so clearly that he compels men to hear him—it is to him that the credit belongs; and so far as this country is concerned, the credit of insisting upon the great practical truth of the contagiousness of puerperal fever belongs to Dr. Holmes. The essay is characterized in places by great strength of feeling. He says he could not for a moment consent to make a *question* of the momentous fact, which should not be considered a subject for trivial discussion, but should be acted upon with silent promptitude. 'No negative facts, no passing opinions, be they what they may or whose they may, can form any answer to the series of cases now within the

reach of all who choose to explore the records of medical science.' Just before the conclusions the following eloquent paragraphs are found, portions of which are often quoted:

'It is as a lesson rather than as a reproach that I call up the memory of these irreparable errors and wrongs. No tongue can tell the heart-breaking calamities they have caused; they have closed the eyes just opened upon a new world of life and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it with less cruelty the death of its dying parent. There is no tone deep enough for record, and no voice loud enough for warning. The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs. The very outcast of the street has pity upon her sister in degradation when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law brought down upon its victims by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claims for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should regard it negligently, unadvisedly, or selfishly.'

The results of his studies are summed up in a series of eight conclusions, and the strong ground which he took may be gathered from this sentence in the last one: 'The time has come when the existence of a private pestilence in the sphere of a single physician should be looked upon not as a misfortune but a crime.' Fortunately this essay, which was published in the ephemeral *New England Quarterly Journal of Medicine*, was not destined to remain unnoticed. The statements

were too bold and the whole tone too resolute not to arouse the antagonism of those whose teachings had been for years diametrically opposed to the contagiousness of puerperal fever. Philadelphia was the centre of the teaching and work in obstetrics in this country, and if we can speak at all of an American school of obstetricians it is due to the energy of the professors of this branch in that city, and for the sake of the memory of the men we could wish expunged the incident to which I will now allude.

In 1852 the elder Hodge, Professor of Obstetrics at the University of Pennsylvania, published an essay on the non-contagious character of puerperal fever, and in 1854 Charles D. Meigs, Professor of Obstetrics at the Jefferson Medical College, published a work on the nature, signs, and treatment of child-bed fevers, in a series of letters addressed to students of his class. Both of these men, the most distinguished professors of obstetrics in America, took extreme ground against Holmes, and Meigs handled him rather roughly.

Nothing daunted, in the following year (1855) Holmes reprinted the essay, calling it *Puerperal Fever as a Private Pestilence.* He clearly appreciated the character of the work he was doing, since in the introduction he says, 'I do not know that I shall ever again have so good an opportunity of being useful as was granted to me by the raising of the question which produced this essay.' The point at issue is squarely put in a few paragraphs on one of the first pages; the affirmative in a quotation from his essay: 'The disease known as puerperal fever is so far contagious as to be carried from patient to patient by physicians and nurses' (1843). The negative in two quotations, one from Hodge (1852), who 'begged his students to divest their minds of the

dread that they could ever carry the horrible virus'; and of Meigs (1854), who says, 'I prefer to attribute them (namely, the deaths) to accident or Providence, of which I can form a conception, rather than to a contagion of which I cannot form any clear idea.'

The introduction to the essay, which was reprinted as it appeared in 1843, is one of the ablest and most trenchant pieces of writing with which I am acquainted. There are several striking paragraphs; thus, in alluding to the strong and personal language used by Meigs, Holmes says: 'I take no offence and attempt no retort; no man makes a quarrel with me over the counterpane that covers a mother with her new-born infant at her breast.' He appeals to the medical student not to be deceived by the statements of the two distinguished professors, which seem to him to encourage professional homicide. One paragraph has become classical: 'They naturally have faith in their instructors, turning to them for truth, and taking what they may choose to give them; babies in knowledge, not yet able to tell the breast from the bottle, pumping away for the milk of truth at all that offers, were it nothing better than a professor's shrivelled forefinger.'

The high estimate in which this work of Holmes's is held has frequently been referred to by writers on obstetrics.

Some years ago in an editorial note I commented upon a question which Dr. Holmes had asked in his *Hundred Days in Europe*. Somewhere at dinner he had sat next to a successful gynaecologist who had saved some hundreds of lives by his operations, and he asked, 'Which would give the most satisfaction to a thoroughly humane and unselfish being, of cultivated intelligence and lively sensibilities: to have written all

the plays which Shakespeare has left as an inheritance for mankind, or to have snatched from the jaws of death more than a hundred fellow-creatures, and restored them to sound and comfortable existence?' I remarked that there was nobody who could answer this question so satisfactorily as the Autocrat, and asked from which he derived the greater satisfaction, the *Essay on Puerperal Fever*, which had probably saved many more lives than any individual gynaecologist, or the *Chambered Nautilus*, which had given pleasure to so many thousands. The journal reached Dr. Holmes, and I read you his reply to me, under date of January 21, 1889:

'I have rarely been more pleased than by your allusion to an old paper of mine. There was a time certainly in which I would have said that the best page of my record was that in which I had fought my battle for the poor poisoned women. I am reminded of that essay from time to time, but it was published in a periodical which died after one year's life, and therefore escaped the wider notice it would have found if printed in the *American Journal of the Medical Sciences*. A lecturer at one of the great London hospitals referred to it the other day and coupled it with some fine phrases about myself which made me blush, either with modesty or vanity, I forget which.

'I think I will not answer the question you put me. I think oftenest of the *Chambered Nautilus*, which is a favourite poem of mine, though I wrote it myself. The essay only comes up at long intervals. The poem repeats itself in my memory, and is very often spoken of by my correspondents in terms of more than ordinary praise. I had a savage pleasure, I confess, in handling those two professors—learned men both of them, skilful experts, but babies, as it seemed to me, in their capacity of reasoning and arguing. But in writing the poem I was filled with a better feeling—the highest state of mental exaltation and the most crystalline clairvoyance, as it seemed to me, that had ever been granted to me—I mean that lucid vision of one's thought and all forms of expression which will be at once precise and musical,

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which is the poet's special gift, however large or small in amount or value. There is more selfish pleasure to be had out of the poem—perhaps a nobler satisfaction from the life-saving labour.'

Last year at the dinner of the American Gynaecological Society in Philadelphia a letter from Dr. Holmes was read referring to the subject in very much the same language as he uses in his letter to me. One or two of the paragraphs I may quote.

'Still I was attacked in my stronghold by the two leading professors of obstetrics in this country.

'I defended my position, with new facts and arguments, and not without rhetorical fervour, at which, after cooling down for half a century, I might smile if I did not remember how intensely and with what good reason my feelings were kindled into the heated atmosphere of superlatives.

'I have been long out of the way of discussing this class of subjects. I do not know what others have done since my efforts; I do know that others had cried out with all their might against the terrible evil, before I did, and I gave them full credit for it.

'But I think I shrieked my warning louder and longer than any of them, and I am pleased to remember that I took my ground on the existing evidence before the little army of microbes was marched up to support my position.'

Fortunately, Dr. Holmes's medical essays are reprinted with his works. Several of them are enduring contributions to the questions with which they deal; all should be read carefully by every student of medicine. The essay on Homeopathy remains one of the most complete exposures of that therapeutic fad. There is no healthier or more stimulating writer to students and to young medical men. With an entire absence of nonsense, with rare humour and unfailing kindness, and with that delicacy of feeling characteristic

of a member of the Brahmin class, he has permanently enriched the literature of the race.

Search the ranks of authors since Elia, whom in so many ways Holmes resembled, and to no one else could the beautiful tribute of Landor be transferred with the same sense of propriety:

> He leaves behind him, freed from grief and fears,
> Far nobler things than tears,
> The love of friends without a single foe,
> Unequalled lot below.

JOHN LOCKE

AS A PHYSICIAN[1]

Among the great men of the seventeenth century not one has more enduring claims to our grateful remembrance than John Locke—philosopher, philanthropist, and physician. As a philosopher his praise is in the colleges. As the apostle of common sense he may be ranked with Socrates and a few others who have brought philosophy from the clouds to the working-day world. Of his special virtues and qualifications as the typical English philosopher nothing need be said, but were there time I would fain dwell upon his character as a philanthropist—in the truest sense of the word. The author of the *Epistle on Toleration*, the *Treatise on Education*, and the *Constitution of Carolina*, the man who pleaded for 'absolute Liberty, just and true Liberty, equal and impartial Liberty', the man who wrote the memorable words, 'All men are naturally in a state of freedom, also of equality,' must be ranked as one of the great benefactors of the race.

With the faculty Locke's connexion has usually been described as 'loose and uncertain'. Indeed, we knew him chiefly as a friend of Sydenham. Until the appearance of Fox-Bourne's *Life* it had not been recognized that he was at times an active practitioner, and that

[1] Read to the Students' Societies of the Medical Department of the University of Pennsylvania, January 16, 1900. Reprinted from *The Lancet*, October 20, 1900.

throughout the greater part of his long life he was ready to treat cases and to give advice; still less was it known that he was a writer of medical essays, and that he had left a large body of clinical reports and papers. I had become familiar with his professional relations through John Brown's essay, *Locke and Sydenham*, and many additional details are given in the *Life* just referred to, but for the more important facts I have made a careful study of the Locke MSS. in the British Museum and in the Record Office.

I. Life.

Let me first give a brief summary of Locke's life. He was born in the county of Somerset in 1632, the son of an attorney who at the outbreak of the civil war joined the Parliamentary side. Of his boyhood and early education but little are known. In 1646 he entered Westminster School under the famous Dr. Busby, where he had as fellow students Richard Lower, Walter Needham, and John Mapletoft, who subsequently became well-known physicians. In 1652 he entered Christ Church, Oxford, and received his B.A. degree in 1655 and the M.A. in 1658. In the following year he became senior student or Fellow of Christ Church, in 1660 Lecturer on Greek, and in 1662 Lecturer on Rhetoric. In 1665 he served as secretary to the embassy of Sir Walter Vane to the Elector of Brandenburg. Until 1660 a student of classics and rhetoric, Locke appears to have been at a loss to know exactly what calling to follow. Thoroughly disgusted, he had broken with the old scholastic philosophy and, imbued with the new learning of Bacon and Descartes, felt what Donne calls 'the sacred hunger of science'. But what probably turned his attention most

actively to medicine was the presence in Oxford of the celebrated Robert Boyle, who with his associates had formed a scientific club, the 'invisible college', which became the nucleus of the Royal Society. Letters of this period show Locke to have been busy with experimental physics, working at problems suggested by Boyle, taking daily notes on the weather (a practice which he kept up for many years), and gradually becoming well versed in the sciences cognate to medicine. Unfortunately we have very little information as to the character of his medical studies, which seem, however, to have been of a rather desultory nature, as he did not comply with the very easy requirements for the degree. On these Fox-Bourne makes the following comment: 'All that was expected from an applicant for a bachelorship in physic was regular attendance during three years at the lectures of the Arabic professor and of the professors of anatomy and medicine, together with participation in a certain number of disputations in the medical school, and after that little more than a delay of four years was necessary to qualify him for the doctorship. The medicine lectures, delivered every Tuesday and Friday morning during term, were limited to an exposition of the teaching of Hippocrates and Galen. For anatomy, the students had in the spring to attend the dissecting of one human body and to hear four lectures, each two hours long, upon it, and in the autumn to hear three lectures on the human skeleton.' These requirements, however, were not complied with, and in November, 1666, he attempted to have a dispensation so that he could obtain the doctorship without previously becoming a bachelor. The request of Lord Clarendon, however, was not heeded, owing probably to the fact that Locke belonged to the Puritan party.

During these years he seems to have been intimately associated with Dr. David Thomas, at that time a practitioner at Oxford. He writes to Boyle in February, 1666-7: 'Mr. Thomas presents his humble service to you. He and I are now upon a new sort of chemistry; that is, extracting money out of the scholars' pockets, and if we can do that, you need not fear but that in time we shall have the *lapis*, for he that can get gold and silver out of scholars cannot doubt to extract it anywhere else.' Though political influence was unavailing to procure the doctor's degree without complying with the regulations, it was potent enough to secure him in his senior studentship at Christ Church, a position usually held only by persons in holy orders, and this post, with the salary attached to it, Locke enjoyed till his expulsion in 1684.

Locke did not receive the bachelorship of medicine until 1674, in which year he was appointed to one of the two medical studentships at Christ Church, and it was supposed by his friends that this was a step preliminary to taking the doctor's degree, but to this he never proceeded. In 1666, when acting as an assistant to Dr. Thomas, Lord Ashley, afterwards the first Earl of Shaftesbury, the celebrated Achitophel of Dryden's satire, came to Oxford to drink the waters of the Astrop wells. He was the subject of a remarkable malady of which I shall subsequently give a detailed account. Dr. Thomas, to whom he had written to have the waters ready for him, was away but had left word with Locke to get them, and as there was some trouble and delay Locke called on Lord Ashley to apologize. There was a mutual attraction and from this acquaintance began a friendship between the two men which had important results, as in the following year we find

Locke installed at Exeter House, the London residence of Lord Ashley, as physician and literary factotum.

From this date until 1675 Locke lived in Lord Ashley's family, occupying himself in all sorts of miscellaneous duties, some domestic, as finding young Anthony Ashley a wife, whom he subsequently attended on several interesting occasions. One duty which interests us in America very much is the share which he took in the Carolina colony. As secretary to the Lords Proprietors he was appointed one of the Landgraves and wrote, it is supposed, the celebrated *Fundamental Constitutions of the Government of Carolina*, the original draft of which, in his handwriting, with many alterations and erasures, may be seen in the Record Office. The celebrated clause, 'No person whatsoever shall disturb, molest, or prosecute another for his speculative opinions in religion or his way of worship,' expresses the spirit of toleration for which Locke strove all through his life. Subsequently, after Lord Ashley was created Earl of Shaftesbury, Locke became Secretary of Presentations. During all this period he was deeply interested in medicine, and was in intimate association with Sydenham, Mapletoft, and other well-known physicians of the day, though it was not until 1674 that he took his M.B. at Oxford. About this time he began to suffer much in health, and in 1675 went to France, where he remained, chiefly at Montpellier and Paris, for four years. His journals during this period, which are very full, indicate his continued interest in the profession, though, as he writes to Mapletoft, 'My health, which you are so kind to in your wishes, is the only mistress I have a long time courted, and is so coy a one that it will take up the remainder of my days to obtain her good graces and keep her in good humour.

She hath of late been very wayward, but I hope is coming about again.' In another letter he says:

'For I doubt whether all the ortolans in France be able to communicate to me one grain of their fat, and I shall be well enough at my ease if, when I return, I can but maintain this poor tenement of mine in the same repair it is at present, without hope ever to find it much better. For I expect not that Dr. Time should be half so favourable to my crazy body as it has been to you in your late disease. 'Tis a good mark, but may have other dangers in it; for usually those whom that old winged gentleman helps up the hill are not yet got out of the reach of the winged boy who does such mischief with his bow and arrows.'

From 1679 to 1684 Locke was again with Lord Shaftesbury, busily occupied in public business, though still maintaining an intimate association with Sydenham and his medical friends. After Lord Shaftesbury's death Locke himself fell under suspicion of having taken part in schemes against the Crown, and from 1683 to 1689 found it safer to live in retirement in Holland. In 1684, by the peremptory order of the king, he was dismissed from his studentship in Christ Church. At the Revolution he returned to London and became actively engaged in literary and political work. Failing health compelled his retirement to Oates, in the neighbourhood of London, where, with Lady Masham and her daughter, he found a delightful home. He died quietly in 1704.

No member of our profession of any age or any country has made so many important contributions to philosophy and practical politics as Dr. Locke. Professor Fowler remarks that the views published in his treatises on Government, Religion, Toleration, Education, and Finance form new points of departure with which no writer on the history of these subjects can

dispense. The same writer says of the effect of his writings on the history of progress and civilization:

'In an age of excitement and prejudice he set men the example of thinking calmly and clearly. When philosophy was almost synonymous with the arid discussion of scholastic subtleties he wrote so as to interest statesmen and men of the world. At a time when the chains of dogma were far tighter and the penalties of attempting to loosen them far more stringent than it is now easy to conceive he raised questions which stirred the very depths of human thought. And all this he did in a spirit so candid, so tolerant, so liberal, and so unselfish, that he seemed to be writing, not for his own party or his own times, but for the future of knowledge and of mankind.'

II. Locke and Sydenham

The story of the friendship of these two great men has been told in a delightful way by the late Dr. John Brown, but he knew nothing of the Shaftesbury papers or of several other important manuscripts which have come to light since his essay was published. Sydenham, eight years Locke's senior, had taken the M.B. of Oxford in 1648, four years before Locke entered Christ Church. There is no evidence to indicate that these well-paired friends, as Fox-Bourne calls them, had met before Locke went to London with Lord Ashley in 1667. In the following year we find them practising together, Locke accompanying Sydenham on his rounds and much interested in the new plan of treating small-pox. In 1668 Sydenham wrote to Boyle: 'I perceive my friend Mr. Locke hath troubled you with an account of my practice as he hath done himself in visiting with me very many of my variolous patients especially.' But the best evidence of Locke's practice at this time and of his intimacy with Sydenham is found in his own

handwriting in the British Museum in a bundle of original medical papers presented by William Seward. They consist of seventeen small quarto pages, closely written, containing the reports of interesting cases which have been well summarized as follows by Fox-Bourne:

'He was attending a kitchen-maid of the Ashley household who was afflicted with dropsy in September, 1667, and again in January, February, and March, 1667–8, and May and June, 1668. In April and May he prescribed for a hard cough with which one of his cousins, a boy of fourteen, and the son of his uncle, Peter Locke, was troubled, and he cured one young child of inflammatory fever in June and another of hysterics in November of the same year. He visited a "sturdy youth" laid up with rheumatism, every day between August 28th and September 19th, when he left him to continue using the medicine he had prescribed for him, and on March 1st, 1668–9, he was able to declare him convalescent. In the same March he treated a girl for fever, besides prescribing for two or three minor maladies; and in May, 1669, he cured a case of angina pectoris. We have no record of any other medical work done by him in 1669; but he had cases of erysipelas and gonorrhoea to deal with in January, 1669–70; one of quartan ague in March, another malady, morbilli, with which William Sydenham, apparently the son of his great friend, was afflicted, in the same month; two of dropsy in April and May, 1670; one of inflammatory fever which he treated nearly every day from the 26th of June till its fatal issue on the 11th of July; a case of disease of the kidneys, and another of stricture, in July; one of colic in August, and one of fever which occupied him every day from the 19th of August till the 2nd of September, when the patient died.'

The case which Fox-Bourne refers to as angina pectoris may have been of this nature, though the disease was not recognized for a little more than a century later. The phrase is 'suffocationem patiebatur et angostiam pectoris et circumcollum.' The report on the son of Sydenham, a lad, aged 11 years, who had measles,

is very complete. The case seems to have been a very characteristic one: onset with cough, a chill and fever, and with slight running at the nose. On the fifth and sixth days a very abundant rash appeared on the face first, then spread over the whole body. Quite minute details are given—the state of the tongue, the state of the rash, and the condition of the eyes. By the ninth and tenth days the rash had disappeared. The notes are continued until the thirteenth day. Then follows a series of interrogations as to points in the case.

Evidence of their friendship exists in the comments and annotations which Sydenham has made in his own hand on some of Locke's writings, and the great interest which Locke took in those of Sydenham. In the second edition of Sydenham's *Methodus Curandi Febres* there is inserted after the preface a Latin poem of fifty-four lines, signed, 'J. Locke.' It was Sydenham's purpose at a later date to write a separate work on small-pox, and for this Locke prepared in 1670 a dedication and a preface, neither of which was used. They will be referred to later. Letters written by Locke during his long residence in France contain frequent references to Sydenham and frequent inquiries after his health; particularly the letters to Mapletoft, who was a common friend. He also consulted Sydenham about Lady Northumberland's illness. It was probably before leaving England that Sydenham gave Locke the advice in a letter, the original of which is in the Record Office.

'*Sydenham to Locke.*—Your age, ill habitt of body and approach of winter concurring, it comes to pass that the distemper you complaine of yealds not so soone to remedies as it would do under contrary circumstances. However, you may not in the least doubt but that a steddy persisting in the use of the following direc-

tions (grounded not on opinion but uninterrupted experience) will at last effect your desired cure. First, therefore, in order to the directing and subdueing also the ichorose matter 'twill be requisite to take your pills twice a weeke or for example every Thursday and Sunday about 4 o'clock in the morning and your clyster the intermitting days about 6, constantly till you are well. In the next place, forasmuch as there is wanting in bodyes broken with business and dispirited upon the before-mentioned accounts, that stock of naturell heat which should bring the matter quickly to digestion 'twill be highly necessary that you cherish yourself as much as possibly you can by going to bed very early at night, even at 8 o'clock, which next to keeping bed that is impracticable will contributt more to your reliefe than can be imagined. As to diett all meals of easy digestion and that nourish well may be allowed, provided they be not salt, sweet or spiced and altho excepting fruits, roots and such like. For wine a total forbearance thereof if it could possibly be and in its steede the use of very mild small beere, such as our lesser houses do afford, would as near as I could guess be most expedient, for thereby your body would be kept cool, and consequently all accidents proceeding from hot and strange humors grating upon the part kept off. As to injections, in your case these things dissuade the use of them—First, your more than ordinary bothe naturall tenderness and delicacy of sense. Then the blood that has twice already bin fetched by this operation, which if we are not positively certaine (as how can we be) that it proceeded not from the hurt of the instrument will (if often repeted) endanger the excoriating the part and making it liable to accidents. Besides they have bin already used (perhaps as often as is wont to be don) and this is not a remedy to be long persisted in by the confession of everybody. Sure I am as I have over and over sayd to you and you know it to be true by my written observations which you have long since seen, that I never use any where I am concerned alone, there being noe danger nor less certainty of a cure in the omitting and in relation to this business I have now asked myselfe the question that I would doe and have resolved that I would lett them alone.

'This is all that I have to offer to you and I have to

thought of it all circumstances relating to your case, with the same intention of mind as if my life and my sons were concerned therein.

'Notwithstanding that by this way the cure is certainly to be effected, yet nevertheless I fear that in ancient bodyes, especially in the debilitating part of the year, some little kinde of gleeting or moisture (but voide of all malignity) will now and then appear by reason of the weakness of the part and will scarce totally vanish till the return of the warm spring.'

Sydenham's chief merit is that he taught the profession to return to Hippocratic methods of careful observation and study. He and Locke were kindred spirits in their manner of looking at the phenomena of disease, and in their methods of work. Nothing could be more like Sydenham's plan than that which Locke urges upon his friend Dr. Molyneux:

'I perfectly agree with you concerning general theories—the curse of the time, and destructive not less of life than of science—they are for the most part but a sort of waking dream, with which, when men have warmed their heads, they pass into unquestionable truths. *This is beginning at the wrong end*, men laying the foundation in their own fancies, and then suiting the phenomena of diseases, and the cure of them, to these fancies. I wonder, after the pattern Dr. Sydenham has set of a better way, men should return again to this romance-way of physic. But I see it is more easy and more natural for men to *build castles in the air of their own than to survey well those that are on the ground. Nicely to observe the history of diseases in all their changes and circumstances is a work of time, accurateness, attention, and judgement*, and wherein if men, through prepossession or obstinacy, mistake, they may be convinced of their error by unerring nature and matter of fact. What we know of the works of nature, especially in the constitution of health and the operations of our own bodies, *is only by the sensible effects, but not by any certainty we can have, of the tools she uses, or the ways she works by*.'

In another place he makes use of an apt illustration, saying: 'Whether a certain course in public or private affairs will succeed well—whether rhubarb will purge or quinquina cure an ague can be known only by experience.' Locke in one place gives an excellent estimate of Sydenham (vol. ii, p. 343, Fox-Bourne): 'I hope the age has many who will follow his example, and by the way of accurate practical observation which he has so happily begun, enlarge the history of diseases and improve the art of physic, and not by speculative hypotheses fill the world with useless though pleasing visions.'

Locke's personal intercourse with Sydenham came to an end in 1683, and Sydenham's death in 1689 terminated a friendship of twenty years which, as Fox-Bourne remarks, 'If it may have done much towards inclining the greatest of English philosophers to pursue his early studies in physic, cannot but have also had a considerable effect in quickening the philosophical temper of the greatest of English physicians.' With Boyle, also, Locke's relations seem to have been very intimate from the days when at Oxford he was a member of the 'invisible college'. Boyle was intensely interested in medicine, and was perhaps the best amateur student the profession has ever had. There is no work from which one can gain a better idea of the state of medicine about the middle of the seventeenth century than the *Experimental Philosophy*, the second part of which is a review of the state of medicine with many suggestions for its improvement. In 1683 Boyle dedicated his *Memoirs for the Natural History of the Human Blood* to 'the very ingenious and learned Dr. J. L.', at whose request he had undertaken the work.

III. Locke's Medical Remains

Locke's medical remains consist of (1) the record of certain remarkable and historic cases; (2) a group of medical essays; and (3) certain journals and commonplace books which contain memoranda and notes of cases. 1. Of the notable medical cases two deserve full consideration, the hydatids of the liver in Lord Shaftesbury, and tic douloureux in Lady Northumberland.

Lord Shaftesbury's case.—The case of suppurating hydatid cyst of the liver is given with unusual fullness and accuracy. I do not remember in seventeenth-century literature a more accurately reported case. It is one of the first instances of operation on hydatid cyst; the consultation on draining of the abscess and the discussion on the propriety of wearing the silver tube give us a unique symposium of medical opinion among the leading consultants of the day, and, lastly, Shaftesbury's tap—as the silver tube was called—has an interest in the satirical literature of the day. No single circumstance better illustrates John Locke as a physician than the elaborate details which he has left on record of his most celebrated patient, the first Lord Shaftesbury. This remarkable man is satirized by Dryden in the well-known lines:—

> Of these the false Achitophel was first;
> A name to all succeeding ages curst:
> For close designs and crooked counsels fit;
> Sagacious, bold, and turbulent of wit;
> Restless, unfix'd in principles and place;
> In power unpleas'd, impatient of disgrace:
> A fiery soul, which, working out its way,
> Fretted the pigmy body to decay,
> And o'er-inform'd the tenement of clay.

Fox-Bourne, commenting on the physical description

of Lord Shaftesbury given by Dryden as a 'pigmy body', states that this must have been used by poetic licence, as 'he was reckoned a handsome man in his day'.

In the fragment of an autobiography[1] there is an account of remarkable attacks of abdominal pain when Shaftesbury was only eighteen years of age. 'At the hunting I was taken with one of my usual fits, which for divers years had hardly missed me one day, which lasted for an hour, betwixt eleven and one, sometimes beginning earlier and sometimes later betwixt those times. It was a violent pain of my left side, that I was often forced to lie down wherever I was; at last it forced a working in my stomach, and I put up some spoonfuls of clear water, and I was well, if I may call that so when I was never without a dull aching pain of that side. Yet this never abated the cheerfulness of my temper; but, when in the greatest fits, I hated pitying and loved merry company, and, as they told me, was myself very pleasant when the drops fell from my face for pain; but then, my servant near me always desired they would not take notice of it, but continue their diversions, which was more acceptable to me; and I had always the women and young people about me at those times, who thought me acceptable to them, and peradventure the more admired me because they saw the visible symptoms of my pain, which caused in all others so contrary an effect.'

Though the special malady which brought Locke and Shaftesbury into the relations of physician and patient has an extraordinarily full history, the statements with

[1] *Memoirs, Letters, and Speeches of Anthony Ashley Cooper, First Earl of Shaftesbury, Lord Chancellor.* Edited by W. D. Christie, 1859, p. 32.

reference to it in the authorities are somewhat meagre. Fox-Bourne says (*Life*, vol. i, p. 197):

'But it would seem that Lord Ashley being himself in bad health and suffering from a malady that no physician could explain, and that was every day becoming more painful . . . and having, moreover, formed a very high opinion of the mental and moral worth of his new friend—persuaded Locke to reside with him as physician to his family.'

Then, again (vol. i, p. 200):

'The internal malady from which Lord Ashley had been suffering ever since 1661, and which had been the accidental ground of his acquaintance with Locke in 1666, now caused him great agony, and in spite of all Locke's efforts to alleviate it by medicinal treatment, threatened to kill him. "My Lord Ashley is like to die," wrote Pepys on the 19th of June, 1668, "having some imposthume in his breast, that he hath been fain to cut into his body." That operation was performed, and Ashley's life was saved, by Locke.'

It is often referred to as an abscess of the side or as an empyema and is spoken of as following an accident.

In the Record Office there are four transcripts of the case in Locke's handwriting. The most complete is in Latin, of which the following is a translation:—

'*The case of the most Noble Lord Anthony Ashley, Baron of Winburne, St. Giles, &c.*—This most noble lord, aged 45, of very slight build and delicate constitution, had been an invalid for many years, and was exceedingly subject, upon the slightest cause, to a recurrent yellow jaundice. There was a painless internal tumour, broad, and slightly projecting, about the anterior region of the liver, and his hypochondria was very apparent to the touch. Although it had been observed 12 years before, the exact time when the tumour first began is uncertain. For since the colour of the skin was unchanged and no swelling was apparent externally, unless the hand were applied it easily escaped the eye; nor through the whole 12 years did it seem to change in the least. The doctors called into con-

sultation on this point, amongst whom were some from the excellent London college, were inclined to the opinion that this firm and unchanging extuberance was not a morbid tumour, but rather some congenital and unusual malformation of the liver. However the patient himself suspects, not without reason, that the tumour first came into existence in the year 1656, especially as at that time . . . he used to fatigue himself overmuch. By too frequent over-exercise his blood became so heated that his skin would immediately be suffused with a deep redness, and his whole body seemed to be inflamed, all which gave rise to a burning fever. From this time on he was conscious of a complete change in the general condition of his body. Whereas before he was troubled more frequently with pains in the left side, and other splenic symptoms, from now on he escaped absolutely free from these troubles, and in their place acquired a constitution prone to other disorders, and especially susceptible to morbus regius [1]. From the prolonged languor brought on by this disease, when his emaciated body and impaired strength would threaten death, he was frequently restored by the timely use of acidulae, by means of which he obtained relief for one or two years, and was carried through so many vicissitudes of health, scarcely escaping with his life, until last summer. Then, happily, an internal abscess at last broke out, bringing to a head the source of so many disorders. There is one thing here which I cannot pass by, and that is that the patient's head never once ached though more than fatigued by disease. This, however, is not the only marvel displayed by that head.

'During a bad night about the end of May, 1668, he was suddenly seized with excessive vomiting, accompanied by much disturbance. Everything he had eaten in the preceding meal was rejected, still raw and undigested, in repeated vomitings. He was purged next day by Dr. Glisson, the learned physician-in-ordinary. On the following morning he appeared discoloured a rusty red, which the physician tried to remedy with suitable drugs. But although the face seemed to return a little to its proper appearance, so

[1] Jaundice.

that he could go about the ordinary duties of life, nevertheless, the languor and loss of appetite returned, anti-icterics and chalybeates being administered in vain. Moreover, about the beginning of June, since all the symptoms were running from bad to worse, the physician prescribed a purging pill to be taken at bedtime. When the patient raised himself up in bed to pass his urine about midnight he was suddenly seized about the region of the stomach and liver with a most acute pain which lasted the greater part of an hour and was finally relieved by resting comfortably in bed. When after an hour or two he again sat up in bed the same excruciating pain returned. Again one hour afterwards he got up, and in the same way when he raised himself upon his buttocks the pain attacked him for the third time, and after a like interval left him. Next morning at 8 o'clock, shortly after taking a purging potion he vomited it up mixed with viscid phlegm. After a while he left his bed, his servants taking him in their arms and placing him upright on his feet, so that his body should nowhere be bent. The cathartic had a satisfactory effect and he was purged. However, though he turned his body, he did not dare bend it, lest the severe pain should come on again. In the evening he began to suffer most acute pain in the back about the loins. This ceased after a quarter of an hour, and at the same there suddenly sprung up below the ensiform cartilage a soft tumour the size of an ostrich egg. It was yielding to the touch, but on being compressed it did not for a moment retain any traces of the fingers. The skin was a brown (?) colour. There was hardly any pain, and no inflammation. This tumour could not be broken up by the drugs which were administered for six or seven days. Then physicians and surgeons were called into consultation and on June 12th it was opened by the application of cautery. This fact is worthy of observation: before the opening of the tumour a somewhat tenacious and flexible plaster fastened itself so firmly to the skin at the border of the tumour that it could not be torn away without leaving behind a large part of its substance; while, on the other hand, the top of the tumour, about the width of an English half-crown or more, was not even discoloured by it, nor was the plaster at all adherent in that part.'

The daily record of the case is in English.

'The 12th of June, 1668, in ye morning a caustick was applied and ye same opened in ye afternoon, at wh. dressing besides a large quantity of purulent matter, many bags and skins came away. The like hapned the next day (being Saturday) both in ye fore and afternoon. On Sunday morning (being ye 14th) at ye first drawing out ye tent, a great quantity of yellow choler gushed out and two or three sluffs, wth some tollerable matter at ye latter end, for ye evening only a little matter came forth. And ye like on Monday both morning and evening.

'On Tuesday morning a great quantity of matter came forth, with many bags to ye number of at least 80, for ye afternoon little or nothing, and so also on Wednesday.

'On Thursday morning we had a new flux, both of matter and skin, in ye afternoon nothing considerable.

'A Friday a wax candle was put deep into ye abscesse, and after ye drawing it out some matter and divers sluffs proceeded, in ye afternoon nothing.

'20. On Saturday morning and eveninge some matter followed and above 10 bags. The passage could not be found.

'21. On Sunday a wax candle put in of four and three-quarter inches and there left until evening, then drawn out without matter.

'22. Monday morning. No running: a sponge tent put in for ye afternoon ℥ iii matter, bags above 20.

'23. Tuesday morning. No running, ℥ i of injection for ye evening ℥ iii or iiii injection, part whereof wh. some matter came away and about 10 bags. About two hours after more came and so ye next morning, at my Lds. rising and about 10 bags at both times.

'24. At ye dressing in ye morning, nothing came. Of injections ℥ v or vi, about three in ye afternoon a great flush brought away about 50 sluffs, whereof most were bags (but not red as formerly by reason of the injection) and some like jelly. At ye evening dressing no running. A glove thick spung tent left in ye orifice.

'25. Morning. It ran of itselfe a little before dressing.

Injection being made there came forth much thin digested looking matter, somewhat foetid with about 12 bags, whereof one very large. A spung tent put in. In ye evening injection, which came away next morning before dressing wth four or five sluffs.

'26. A Friday morning, injection was made & some thin matter came forth. A short spung tent put in: in ye afternoon some matter, but no sluffs.

'27. Upon ye drawing out ye spung tent matter followed wth six or seven sluffs. O i injection being made whereof much stayed behind, in ye afternoon ye spung tent being pulled out, a great flush of matter followed, wth almost 20 sluffs. O i injection was made whereof a great part staid in. A hemp tent was put in. Some matter came out in ye night & left a yellow tincture on ye cloths.

'28. Pulling out ye tent, some yellow matter came out wth three or four skins. A spung tent put in. The like issued in ye afternoon. O i injection was made & a flax tent put in.

'29. It ran in ye night. Next morning after injection a flush of yellowish matter issued wth 18 sluffs. A spung tent put in, after injection, whereof a considerable part remained. In ye afternoon upon ye drawing out ye spung tent, much matter gushed forth, being somewhat fetid, with 12 or 14 sluffs and bags. On injection being made ye same came freely forth, tinctured with matter. A flax tent was put in.

'30. In ye morning little matter came out, yellow tinctured, wth one or two skins. A spung tent was put in. For ye afternoon a little matter, wth two or three small sluffs. A flax tent put in.

'July 1st. A Wednesday morning. After a second injection much yellow matter came forth wth three or four yellow sluffs, & at last a considerable quantity of whitish well digested matter came out. A flax tent put in. At ye pulling out whereof in ye afternoon some thin matter proceeded & after injection more but little discolored & only two sluffs. A flax tent put in. My Ld. complained of a little paine, lower towards his right side.

'2. Upon ye opening on Thursday morning, some little matter came away, but not fetid, rather of ye smell of wine, wth one small sluff. A spung tent put

in. In ye evening little came forth, no bags. A spung tent put in wth one injection.

'3. The spung tent being pulled out two yellow bags gushed out, without any considerable injected matter, and afterward five or six small sluffs with a little tinged liquor. Injection was made and spung tent put in.

'4. Saturday morning. Upon pulling out ye tent little proceeded. After ye putting in ye small catheter & injection made considerable quantity of matter issued. A spung tent was put in; for ye afternoon a large quantity of well digested matter came out. No injection made. A spung tent put in.

'5. Yellow matter came forth with four or five sluffs, whereof one great one suckt into ye end of ye siphon. After injection a spung tent put in, wh. in ye afternoon being pulled out a good quantity of matter followed, well digested, especially through ye small catheter and siphon. A few sluffs came out, one great one. A spung tent put in.

'6. In ye morning ye small catheter & siphon were put in; divers sluffs, some after injections, came forth, whereof three or four large ones. A hollow tent was put in upon ye pulling out whereof a sluff came forth, wth divers very little ones; more seemed to stop ye passage but could not issue, because ye thinner parts did run out before through ye hollow pipe. Neither did injection promote their coming forth, though some matter of a brownish colour came out.

'7. Much yellow matter ran in ye night and some more this morning, with two or three sluffs. Injection was made, whereof ye greatest part came forth. A spung tent was put in. At night a sluff stuck to ye tent at its pulling out & 4 or 5 more where 2 very yellow came afterwards. No injection. A silver hollow tent put in.

'8. It run very much in ye night, ye napkin was stained with yellow and green, one bag. A spung tent put in. In ye evening 4 or 5 sluffs, some matter. An open pipe put in.

'9. Little run all night and sluff stopt ye pipe. One or two more followed, a considerable quantity of atheromatous matter. At night two sluffs; very little atheromatous matter.

'10.[1] A great running through ye hollow pipe, two or three sluffs. The matter at last being whiter and more even than before. Much running till night. Some sluffs. Injection made and a hollow pipe put in, after most of ye injection was discharged. After this a pain supervened in my Ld's. back about ye region of his liver, & at night he vomited; and had a cold shivering; wh. seemed to proceed from somewhat too liberal diet that day & catching some cold.

'11.[1] After a little sweat in ye morning, my Ld. was better. He was not drest till ye afternoon: ye ulcer having very much discharged itselfe in ye meantime; wth some few sluffs.

'12.[1] A little matter wth few sluffs. Injection made. A hollow pipe. At night run very little. Two sluffs.

'13. Not drest in ye morning. Ran much. At night little matter, 2 or 3 sluffs.

'14. It ran much yellowish gleet and matter in ye night. But upon ye opening no matter nor sluffs issued, though injection were made. At night one yellow sluff & a little good whitish matter.

'15. In ye night it ran much yellow matter & about six small sluffs. Injection made. No meeting in ye afternoon.

'16. Upon opening much running of yellow matter appeared, with 4 or 5 yellow sluffs.

'17. A large flux of yellow liquid, wth 4 or 5 yellow sluffs, whereof two large ones sticking in ye pipe. Injection made.

'18. It had run somewhat copiously before dressing, wth ye ejection of one very small yellow bag. Injection being made brought forth some matter & a considerable quantity of very yellow liquor.

'19. Little running before dressing, after it none, no injection.

'20. Small quantity (?) of lesse yellow liquor run before dressing, 4 or 3 sluffs. Injection made.

'21. Yellow liquor has continued running. No sluffs nor injection.

'22. Some pretty laudable yellowish matter came out upon dressing. Injection was made.

[1] The sympathetic powder made use of.

'23. A little matter issued upon coughing. No injection.

'24. The like today.

'25. A few small sluffs. Little matter & not yellowish. No injection.'

From the long-standing character of the tumour and the character of the material which escaped—the innumerable bags—there can be no doubt that the disease was hydatids of the liver, which, remaining quiescent from 1656, had, as is so often the case, suppurated. It is one of the first instances on record in which the abscess was opened. The use of the sympathetic powder on the 10th, 11th, and 12th shows how strongly popular feeling had affected the profession.

Naturally, from the prominent position of the patient and the strange character of the disease, the case attracted unusual attention. The point that concerned Lord Shaftesbury himself most acutely was whether it was better to remove the silver drainage-tube or to keep it in. To get the opinion of the faculty on the subject, he sent, with Locke's assistance, a circular letter containing the following questions:—

'1. Which is most advisable, to resolve to keep it constantly open, or to heal it up as soon as conveniently may be?

'2. Whether, if it be healed up at all, one of these two dangers is not like to follow; either a new collection of matter, the imposthume lying below ye orifice by which it vents itself, or a feaver upon stopping of so considerable an issue?

'3. Whether if it be to be healed up at all it be not necessary to keep it open as long as any flux of matter comes through the pipe more than would be from an issue of the Depth and Bigness of ye pipe?

'4. Whether the pipe that is now in be not of the fittest length and bigness to be worne constantly to keep it open?

'5. Whether whilst it is best open it be not best to dresse it but once in two days, especially in cold weather?

'6. Whether whilst it is best open it be convenient to use any Injection, how often & of what sort & to what purpose?

'7. Whether if it be kept long open it will be in danger of growing in a worse condition than a simple issue of that depth, either by turning to a foule ulcer or a fistula or any other way, and if there be any such danger how to be prevented?

'8. Whether the bare keeping in a Silver pipe will, without paine, keep it open as long as one pleases?

'9. Whether I may travel in a coach, ride on horseback, boate, or use any such exercise safely with a pipe in of this length?

'10. Whether if it be kept long open Nature will not in time so fortify the parts about the end of the Pipe as to make the danger it may bring by rubbing upon them in any exercise, very little or none at all?

'11. Whether during the time it is kept open frequent purgeing be necessary and how often?

'12. Whether if it should be kept always open it is not to be feared that a constant flux of matter from it, especially if it should continue to be of any considerable quantity, may very much weaken and emaciate the body, & how to be prevented?' (Handwriting not Locke's.)

To this circular there are among the Shaftesbury papers the replies of Locke, of Sydenham, of Glisson, of Sir George Ent, of Micklethwaite, of Timothy Clark, and of the Abbé Beaupreau of Angers, an eminent French physician. With the exception of Clark, who urged that the issue should be healed, the opinions agree in the main. They are too long to quote at length, but those of Locke and Sydenham are of sufficient historical interest to be given.

'*Consilium Abscessus* (Locke).

'1. It is better to heal it up as soon as it may safely be done. Because it is not convenient to have a con-

stant issue of that depth in that place if it might be remedied.

'2. To secure from the danger of a new collection of matter I think it will be

'3. Convenient not only till the flux of matter be no more than may be well expected from a flesh issue of that depth, but after it hath gradually decreased to that small thing, it be kept open at least three or four months at what time soever the flux come to that low ebb, but if it happen after Xmas, as in the spring, that it be kept open till the beginning of the next winter, that the flux be constantly and warily observed, and that it be sometimes diligently searched, so that by these ways all the security possible may be had that there is not the least sore or hollow left behind unhealed up. And to prevent a fever or other disorder in the blood upon its stopping up, it will be necessary then and sometimes after to use a spare diet with frequent purging, till Nature, used to the convenience of this discharge, may by degrees accustom herself either to master or vent her humours some other way.

'4. The pipe now in I conceive to be of the proper length and bigness that may be to keep it open, which is not at all to be altered or shortened till you resolve to heal it up, for if you shorten it sooner you heal it sooner too, for the flesh will certainly grow up still & close the end of the pipe, though all is not secure behind. Nor do I see what harm the pipe can do in touching the bottom of the issue more than the sides, where nature equally endeavours to generate flesh to fill up the cavity as it does at the end. And if the pipe upon any motion of the body should perhaps grab a little (which I believe it will not be very apt to do) all the danger will be the filching a little blood from this new-grown flesh (for there can be no great vessels in that which may be in danger to be broken), which is not of half so much hazard, if any at all more than the pain, as to let it close up but one minute before the time. And to prevent any injury from the stiff silver pipe you may in travel or exercise use a wax candle tent exactly of the length and thickness of the silver pipe.

'5. In cold weather once a day at most will be enough to dress it, and then the air of the room where it is dressed to be made as warm as conveniently may be.

'6. In cold weather an injection warming and strengthening and resisting of putrefaction to prevent the harm that may come from the cold air may be convenient to be made use of as often as it may be dressed, but in warm weather may be wholly omitted. And certainly all the year once a week or fortnight an injection to prevent the growing of a fistula, putrefaction and a fistula being the two great evils that are to be feared and prevented in the long keeping of it open, which is also an answer to the

'7. Seventh.

'8. I suppose the silver pipe that is now in may be kept in as long as one pleases without danger or pain.

'9. Travel & exercise with a tent of wax, or any such matter as will resist the closing of the sides but be pliant to the motions of the body, may be not only safe but usefull.

'10. The longer the parts are used to the pipe the less danger will be from its hurting it, the parts accommodating themselves to the figure of the pipe which it constantly uses, and by degrees growing stronger and harder where they are pressed by it.

'11. Whilst there is a design of healing of it up purging once a fortnight may be useful to divert the humours from flowing to that part, but else in respect of the health of the body I suppose there would be less need of purging during this vent (?) than at other times, and perhaps a care of diet will with more advantage to the health subtract the humours than purging, which being constant may have other inconveniency;

'Or, 'tis to be hoped that whilst by careful dressing and injecting the wound is kept in good condition, and the constitution of the body in good temper by a regular diet, the flux will rather advantage than injure the health and strength of the body.'

Sydenham's opinion is one of the few papers in his own hand. (Some of the words are very difficult to decipher.)

'I reccomend it by noe meanes saff for his Lordshipp to stopp up the abscess, triall having once bin made of the unsuccessfullness of doing it & the flux of matter as yet seeming too much in proportion to the canale, and

I judge it better to keepe it open with a silver pipe then a wax candle, in regard that from the use of a candle the matter will have the less opportunity to issue out & consequently the passage choak up. But I think 'twere better that the pipe were shorter because by the present length thereof his Lordship is liable to dangerous accidents from any unequal motion of the body which in process of time may easily happen from riding in a coach, stouping or the like: nor does it seeme to be suspected that the matter will not worke itself out when the orifice shall be kept open. I conceave it may somewhat contributt to the discharge of the matter if my Lord shall lie on his left side or much as he can in regard . . . the imposthume is depending it he shall lie with his upper parts low. I hold it very useless to use irrigations of any sort because the cavity . . . being depending, the liquor how agreeablesoever in other respects will by lodging itself in any little cavities beget new impostumortions (?) to which those irrigations administer matter and by this means the cavity still enlarged. I should thinke that a drying drinke, constantlye kept to for ordinary drinke would be more conducible to the drying up of this flux of matter and sweetening the whole mass of blood and humors than anything whatsoever. Nor do I conceave that my Lord's spare habitt of body may discourage from this course, but rather contrary when 'tis notoriouslye known that on drying diett though used with greater severity than 'twill be necessary to put my Lord upon, hath after a while rendered bodies that before were very emaciated now plumper and vigorous. But what 2 draughts in a day can signifie and those too of a liquor so compounded that the greater respect is had to the oncerteyne & constiturell virtue of & the lesser to the certeyne and sensible qualitie of Driers I canot imagine.

'This therefore with submission to those who know more I should advise.

'That nothing be done to the part saveing the use of a pipe that may be made somewhat shorter or to be lengthened with a wan (?) handle, that it be dressed once a day if the matter be much, once in 2 days if little.

'That of the stronger sort of liquor halfe a pint be taken hott every morning 1 hour before his Lordship

riseth and the same quantity at night as soon as he is in his bedd.

'That the smaller liquor be constantly drunke at his meales and at other times.

'That he purge or take a clyster every 5° or 6° day.

'Lett his Lpps. diett be in proportion to this way . . . att least lett . . . be avoided.'

Then follow two prescriptions of the stronger and smaller liquors. The French Abbé, whose opinion is also given, was evidently very much impressed with a full report of the case as narrated by Locke. He says: 'I can hardly determine myself whether I ought to admire more in it the wise and admirable proceedings of my Lord's physician or the exactness of the author of the relation both for the elegance of his style and his judicious remarks with which he hath illustrated his narrative.'

Locke made inquiries everywhere of his professional friends as to the existence of similar cases, and among the papers there are three very interesting reports, one of a case of empyema opened by making an issue; another the case of James Oddy, sent on Jan. 22, 1668, by T. Batteson, was in all probability a hydatid cyst, as when the side was opened matter like fish skins and white of eggs to the number of forty and to the amount of one quart came out. The greater ones had lesser ones in them, like the seeds of a lemon. A third report was sent to Locke by Thomas Strickland, of a man who fell into a languishing with great pain in his side and stomach, which persisted for a year or so. When death was expected a great swelling arose in his side with infinite torment. A neighbour cut upon the head of the swelling with a penknife, 'then came out several blathers like winde eggs, some as large as turkey eggs, others as hen eggs.' It was open for a year, in which

time over 400 of these came out. He afterwards regained perfect health.

The satirists of the day made great sport of the silver pipe which Lord Shaftesbury continued to wear for the rest of his life. The wits of the day called a sort of vessel with a turncock, constructed for holding wine, a *Shaftesbury*, and his common nickname was 'Tapski'. Duke, an imitator of Dryden, describes him under the name 'Antonius' in his lines—

> The working ferment of his active mind
> In his weak body's cask with pain confined
> Would burst the rotten vessel where 'tis bent
> But that 'tis tapt to give the treason vent[1].

In Act III of Dryden's *Albion and Albanius* the king was represented by a huge drawing of a man (meaning Shaftesbury) and several fanatical heads who sucked poison from him which runs out of a tap in his side. And again, in a mock account of an apparition stated to have appeared to Lady Gray, it says: 'Bid Lord Shaftesbury have a care of his spigot; if he is tapt all the plot will run out.'

A satire called *The Hypocrite*, written by Carryl, concludes thus:

> The silver pipe is no sufficient drain
> For the corruption of this little man.

Shaftesbury appears to have enjoyed very good health and lived a very active, energetic life. I find a statement (*Raleigh Redivivus*, p. 48) that in the year 1672 it (the abscess) was 'opened by Mr. Knolls, the surgeon, under the direction of Dr. Willis, and an issue inserted for the regular discharge of the humour'. This probably refers to a subsequent blocking of the tube. As to his death, Christie in his *Life* (vol. ii, p. 455) says:

[1] Anderson's *Poets of Great Britain*, vi, p. 628.

'He was taken ill with the gout, from which of late years he had often suffered, about the end of December. The malady flew to his stomach; he suffered excruciating agonies; and he died in the forenoon of the 21st of January' (1683). Missal 'mentions of one of the natural causes of Shaftesbury's death the sudden cessation of the discharge from his internal abscess', from which we may understand that he continued to wear the silver tube.

Lady Northumberland's case.—As this has already been published in full in the *European Magazine*, and as there is a note upon it in *The Lancet*[1], I will only give a brief abstract. The description is given in letters to his friend Dr. Mapletoft.

Letter IX, Dec. 4, 1677. After an apology for so unwelcome an occasion of writing, Locke says:

'On Thursday night last I was sent for to my Lady Ambassadrice, whom I found in a fit of such violent and exquisite torment that (though she be, as you know, a person of extraordinary temper, and I have seen her in the course of this distemper endure very great pain with a patience that seemed to feel nothing) it forced her to such cries and shrieks as you would expect from one upon the rack, to which I believe hers was an equal torment, which extended itself all over the right side of her face and mouth. When the fit came there was, to use my Lady's own expression, as it were a flash of fire all of a suddaine shot into all these parts, and at every one of those twitches which made her shriek out her mouth was constantly drawn on the right side towards the right ear by repeated convulsive movements which were constantly accompanied by her cries. This was all that appeared outwards in these fits according to the exactest observation I could make, having had but too many opportunities to do it. These violent fits terminated on a suddaine, and then my Lady seemed to be perfectly well, excepting only a dull

[1] Vol. ii, 1828-9, p. 367.

pain which ordinarily remained in her teeth on that side and an uneasiness on that side of her tongue which she phansied to be swollen on that side, which when I looked on it, as I often did, had not the least alteration in it in colour, bignesse or any other way, though it were one of her great complaints that there was scalding liquor in her fits shot into all that half of the tongue. She had usually a precaution of the fit by a little throbbing in the upper jaw just over against it. In all this time of her being ill she has not found the least pain in all the other side of her face and teeth, which has so wholly possessed the right side that it went even to the very tip of her tongue and the last tooth before on that side. When all this torment was over there was not the least appearance of any alteration anywhere on her face, no inflammation or swelling in her mouth and cheeke; very little defluction of rheum more than what the disturbance of those parts in these fits might cause. Speaking was apt to put her into these fits; sometimes opening her mouth to take anything or touching her gums, especially in the places where she used to find those throbbings, pressing that side of her face by lying on it were also apt to put her into a fit. These fits lasted sometimes longer, sometimes shorter, were more or less violent, without any regularity, and the intervals between them at the longest not half an hour, commonly much shorter.'

Locke then describes the treatment, topical anodyne applications to the gums, which gave relief. The next day the fits returned and she was purged. Bleeding was considered, but she had been so often and so much blooded on a like occasion this summer without help that Locke thought best not to do so again. The next night she took a quieting cordial, but during the first part had the fits very severely. He says, 'I wish with all my heart you were here,' as Lady Northumberland had had so little success with the French physicians that she would not call them. He asks 'whether you do not think this to proceed from some affection in the

nerves in the place where the tooth was drawn, which draws all the rest into consent and convulsive motions on this side?' At one o'clock in the afternoon he writes again that a blistering plaster has been placed on the back of the neck (interscapulus). 'She has, especially when the fits are most violent, a drinesse in her lips more than ordinary.' On Sunday night he writes with great satisfaction telling of her improvement, but he asks for the 'best advice you can get'. On the 22nd he writes: 'On reading our friend's [Sydenham's] letter I was ready to cry out, "The spirit of the Prophets is upon the sons of the Prophets," I having in what I have done here not only proceeded by the same method, but used the very remedys he directed as to the maine.' He speaks of the diet and says that he had advised an open-air life to strengthen the genus nervorum, as he thought that hysterical vapours increase the tumult and disorders in the nerves, in which he suspects an ancient fault, as she has extreme and violent itching in the gums on that side long before the fits.

IV. Medical Writings

These consist of fragmentary papers, the chief interest of which to-day is that they are from the pen of the great philosopher. They are among the Shaftesbury papers in the Record Office, and I have had them copied with a view to subsequent publication. They are: (*a*) *Ars Medica* or *De Arte Medica*, an introduction to a treatise on the philosophy of medicine. One cannot read the fragment without feelings of deep regret that the design was not carried out. The scope of the intended work may be gathered from the following summary: 'But, not to expatiate into the large field

of natural philosophy, where perhaps the foundation of the mischief was first laid, I shall, according to my design, confine myself at present to that branch of it which immediately concerns the health of men; and, in physic, shall consider: 1. The present state of the faculty of medicine as it now stands, in reference to diseases and their cure. 2. The several degrees and steps whereby it grew to that height it is at present arrived to, which I suppose are these following: (1) experience; (2) method, founded upon philosophy and hypothesis; (3) botanics; (4) chymistry; (5) anatomy; in all which I shall endeavour to show how much each hath contributed to the advancing the art of physic, and wherein they came short of perfecting it. 3. What yet may be further done towards the more speedy and certain cure of diseases; i. e. by what means and method the practice of physic may be brought nearer to perfection.' (*b*) *Anatomia*, a longer paper, in which Locke contends 'that nature performs all her operations in the body by parts so minute and insensible that I think nobody will ever hope or pretend even by the assistance of glasses or other inventions to come to a sight of them'. From the gross parts he thinks not much can be learned. We 'see not the tools and contrivances by which nature works'. 'Though we cut into the inside we see but the outside of things and make but a new superficies for ourselves to stare at.' The paper is a forcible statement against the hope that anatomy can ever show the true essential causes of disease. It is quite possible that the article was prepared at Sydenham's suggestion, or for his use, as at the top of the page, in Sydenham's handwriting, is the sentence: 'Others of them have more pomposity and speciously prosecuted the promoting of this art by searching into

the bowels of dead and living creatures, as well sound as diseased, to find out the seeds of discharging them, but with how little success such endeavours have been or are likely to be attended I shall here in some measure make appear.' (*c*) *Respirationis Usus*, a short paper on the subject. (*d*) *Tussis*, an essay on coughs, in which subject Locke took a personal interest. Here, again, is evidence of Sydenham's hand, in a brief marginal note on cures done by riding in consumption and morbi obscuri. (*e*) A dedication and preface to a proposed work on small-pox by Sydenham. From the outset of their friendship Locke took a deep interest in the writings of Sydenham, and, as I have mentioned, he contributed a Latin poem in praise of him and of his methods to the second edition of the *Methodus Curandi Febres* (1668). It would appear that about 1670 Sydenham contemplated writing a separate work on small-pox, in the treatment of which he had had great success, but the physicians were at first very hostile to his new plan. Among the Shaftesbury papers are a dedication and a preface written by Locke. Sydenham had shared with his friend the professional care of the family of Lord Ashley, and had tried with happy results his cooling regimen in cases of small-pox. In the dedication he (or rather Locke) says :

'At least, my lord, I thought it reasonable to let you see that I had practised nothing in your family but what I durst own and publish to the world, and let my countrymen see that I tell them nothing here but what I have already tried with no ill success on several in the family of one of the greatest and most eminent personages amongst them.'

The preface is a sharp and stout defence of the new method, in which Locke does not spare the colleagues of his friend.

'How much some of my own faculty have fomented and increased these reports, they themselves know, and with what design I leave it to their own consciences to tell them, only they must give me leave to say it would have become them out of common charity as good men, as well as out of an obligation to improve their art and save men's lives as physicians, upon the first intimation of an unusual method of curing so common a disease as this is, to have inquired more particularly of the way, observed the circumstances, and informed themselves of the events before they cried it down as dangerous and fatal, and frighted all that came within their reach from an inquiry into or trial of his method by the abhorrency they had given them against so bold and hazardous a practice.'

Evidently Sydenham smarted under the calumnies and misrepresentations, and the preface speaks of 'the greatest indignities beyond almost the sufferance of a man, and the endangering not only of my reputation and livelihood, but even my life itself'. The article is chiefly valuable from the account which it gives of the steps by which Sydenham was led to adopt his cooling treatment. Neither dedication nor preface was ever used. The projected work did not appear and many years later the *Observationes Medicae*, which contained his matured experiences, was dedicated to Mapletoft, and another preface was used.

V. Journals, Letters, and Commonplace Books

A keen observer, a constant note-taker, and of most neat and accurate literary habits, Locke has left a large mass of manuscript, which has been carefully searched and sifted by Mr. Fox-Bourne, in whose *Life*, as well as in that by Lord King, there are many letters and extracts illustrating his work as a physician. The letters to Mapletoft about Lady Northumberland have

been referred to. Of the journals, those of his Holland sojourn, which are said by Fox-Bourne to contain much of medical interest, I have not yet seen. In the British Museum is a very characteristic journal in which one may follow Locke's medical work for the year 1679. It is bound with an *Ephemeris* or Calendar of the year. He was in Paris during the early months. As usual he was interested in bills of mortality, and he states (January 16) that the deaths in Paris were from 19,000 to 20,000 a year. He makes a note to ask if the deaths of Quakers, Anabaptists, and Jews are recorded in London. On April 12 he comments on the handbills set up about town with a receipt to kill lice. There are many notes on the treatment of diseases and receipts, to the collection of which he seemed very partial. He queries whether the sympathetic powder could be of any use in dentium dolor, indicating that he still had a lingering belief in it. There are many notes on various topics and memoranda about books, &c. On May 8 he sailed from Calais. On June 4 are brief notes of a Mr. N., sick of a fever, whom he bled, and afterwards jaundice appeared. Notes on vomiting, diseases of the eye, icterus, hernia, hysteria, hypochondria, rheumatism, mania, and tussis occur in June. On August 18 he was sent for in consultation in the case of Mr. Beavis, of Olanligh, Kent, and for the next six weeks the journal is very full, containing a detailed account of the symptoms of Mr. Beavis and the treatment, many notes on the practice of Dr. Jacob, the attending physician, and a characteristic description of two attacks of fever with which he was himself attacked. Mr. Beavis had a long illness, possibly typhoid fever, and it was not until the end of September that Locke left for London.

The Bodleian Commonplace Book with the Anecdota Sydenhami.—This is a small folio, bound in parchment, which originally contained 400 pages, of which 248 are torn out. Dr. W. G. Greenhill published a part of the manuscript in 1845 as *Anecdota Sydenhami*, and the following extract from the preface may be quoted:

'They are taken from a MS. in the Bodleian Library at Oxford (Rawl. C. 406), very neatly (and for the most part very legibly) written, apparently about the end of the seventeenth century. The name of the writer is not mentioned nor is anything known of the history of the MS., except that it once belonged to Dr. Richard Rawlinson and forms part of the collection of MSS. bequeathed by him to the University of Oxford about the middle of the last century. At the beginning of the volume (of which about two-thirds have been torn away) are these words: "Extracts of Sydenham's Physick Books and some good Letters on Various Subjects." This is the whole of the *external* evidence respecting the genuineness of the following Anecdota; and perhaps, if there were nothing more to say in their favour, it might be doubted how far the editor was justified in giving them to the world under the sanction of the name of Sydenham: the *internal* evidence, however, is much more conclusive, and indeed to his own mind perfectly satisfactory. The writer professes to have been acquainted with Sydenham himself, and to have originally written the following Notes, partly from his dictation in the years 1682, 1683, and partly from some of his MSS. written chiefly in 1670. These Notes he appears to have revised and written out correctly in their present form *after* 1685 (as he refers to the edition of Sydenham's Work published in that year), and (if the editor's conjecture at p. 69 be correct) *before* 1692, as that is the date of the first edition of the *Processus Integri*.'

Apparently it was not until Mr. Fox-Bourne examined the manuscript that it was recognized as belonging to Locke, whose handwriting is most distinctive. While largely made up of extracts from Dr. Sydenham's physic books, the *excerpta ex ore Sydenhami*, dated 1682-3, show

the maintenance at this date of an intimate professional relationship between the two great men.

The other medical papers in the volume illustrate the wide scope of Locke's inquiries. There are statements about the Peruvian bark and the best methods of its preparation. But the chief interest after the Sydenham notes relates to a sort of collective investigation which Locke instituted on public health. He seems to have a deep conviction that much good would follow a careful study of the bills of mortality. His circular letter contains the following inquiries (MS., p. 68):

'1. What bills of mortality are kept in foreign countries, either as to the diseases of which persons die, or the number who die weekly or yearly in the most capital cities or towns of Europe or other parts of the world, as Paris, Madrid, Amsterdam, Venice, Hamburg, Rome, Constantinople, Smyrna, Dublin, Edinburgh, &c., as also in New England, Barbadoes, Jamaica, and other Plantations. 2. The aire of different countries, with the temper and alteration of the same at the different seasons of the year, and the diseases those countries are subject to and the time when. 3. The opinion physicians have of Jesuit's bark, and the best account they can give of it. 4. The esteem which physicians have had of Dr. Sydenham and his works. 5. The order observed in foreign countries as to physicians, surgeons, apothecaries, and herbalists for the improvement of travellers and young students.'

There are answers from several correspondents. Dr. Willoughby of Dublin (April 17, 1691) gives a tabular account of the bills of mortality between 1682–90 (inclusive), and a description of the air of the country. He speaks of the Peruvian bark as 'the only specific I know in nature'. Of Dr. Sydenham he says, 'he has been very honest in rescinding from Physick all the unnecessary pomp of alteratives and preparatives, and reducing it to the use of the grand remedies which in Physick do

justly fill both sides of the loafe.' In another place is an account of Dr. Willoughby's proposal for the improvement of agriculture in Ireland, the important part of which was that every proprietor who will not improve his waste land shall make over four-fifths of it to the Crown. There is a brief statement of the Amsterdam bills of 1691 and 1693, and an account of Dr. Bett's proposal to the Lord Mayor for the improvement of the returns in London. There are letters from James Young of Plymouth about various diseases, and one from Dr. Eales (?) giving an account of Dr. Morton's books, in which 'he has improved the hints of our good friend the great Dr. Sydenham admirably well'. Dr. Patrick Dun sends a full statement about the mortality bills of Dublin, and pp. 93–6 of the MS. contain *in extenso* the death-rates from January, 1695, to April, 1698. Pages 110–357 are torn out, but from the index, pp. 369–71, we can glean the contents of the missing leaves—books whose authors are unknown, 'books to be wrote,' and 'books wrote in defence of the murder of King Charles I', with a long list of the authors, and about the *Eikon Basilike* and the various controversies upon it, extending from pp. 199–236.

Though qualified and deeply interested in both the science and the art of medicine Locke never became, as Fox-Bourne says, 'in any orderly way a physician.' Until he left England in 1683 'he was still waiting for an opportunity of devoting himself steadily to his favourite occupation. He was still generally spoken of by his friends as Dr. Locke, and he still regarded himself as before everything else a doctor.' Hereafter questions of philosophy, finance, education, trade, theology, &c., occupied his busy life, but through it all, and to the very end, there are references in his letters and

journals to show that his first love was not forgotten. In the memorable and oft-quoted letter to Dr. Thomas Molyneaux in praise of Sydenham's method, January 20, 1692-3, he speaks of himself as one who wishes well to the practice of physic 'though he meddles not with it', yet in the same year we find him prescribing for a friend's wife. In 1694 he is corresponding with Dr. Hans Sloane on medical matters. In January, 1697-8, King William consulted him, believing that they suffered from similar diseases. In 1701 he writes again to Sloane about a patient with an obstinate fever, and in the following year he gives very wise advice to his old friend Lomborch, who was ill. Evidently Locke's clear, strong judgement was valued by his friends in all relations of life, and as Somers and other politicians turned to him for instruction in questions of trade and finance, so his friends and others insisted upon utilizing his medical knowledge. Sydenham, Boyle, Thomas, Mapletoft, and Molyneaux had been his intimate associates. In Montpellier, in Paris, and in Holland he had been a welcome guest in medical circles, and in London we have met him in consultation with the most eminent practitioners of the day upon a most important case, and handing in a written opinion as their colleague and equal.

For each one of us there is still a 'touch divine' in the life and writings of John Locke. A singularly attractive personality, with a sweet reasonableness of temper and a charming freedom from flaws and defects of character, he is an author whom we like at the first acquaintance, and soon love as a friend. Perhaps the greatest, certainly, as Professor Fowler says, the most characteristic, English philosopher, we may claim Dr. Locke as a bright ornament of our profession, not so

much for what he did in it, as for the methods which he inculcated and the influence which he exercised upon the English Hippocrates. He has a higher claim as a really great benefactor of humanity, one of the few who 'reflected the human spirit always on the nobler side.' One of Locke's earliest writings was a translation for Lady Shaftesbury of Pierre Nicole's *Essays*, in one of which, on the 'Way of Preserving Peace with Men', Locke seems to have found a rule of life which I commend to you: 'Live the best life you can, but live it so as not to give needless offence to others; do all you can to avoid the vices, follies, and weaknesses of your neighbours, but take no needless offence at their divergences from your ideal' (Fox-Bourne).

ELISHA BARTLETT

A RHODE ISLAND PHILOSOPHER[1]

Rhode Island can boast of but one great philosopher —one to whose flights in the empyrean neither Roger Williams nor any of her sons could soar—the immortal Berkeley, who was a transient guest in this State, waiting quietly and happily for the realization of his Utopian schemes. Still he lived long enough in Rhode Island to make his name part of her history; long enough in America to make her the inspiration of his celebrated lines on the course of empire. Elisha Bartlett, teacher, philosopher, author, of whom I am about to speak, whom you may claim as the most distinguished physician of this State, has left no deep impression on your local history or institutions. Here he was born and educated, and to this, his home, he returned to die; but his busy life was spent in other fields, where to-day his memory is cherished more warmly than in the land of his birth.

I

Born at Smithfield in 1804, Bartlett was singularly fortunate in his parents, who were members of the Society of Friends, strong, earnest souls, well endowed with graces of the head and of the heart. The gentle

[1] An address delivered before the Rhode Island Medical Society, December 7, 1899. Reprinted from the *Transactions of the Rhode Island Medical Society*.

life, the zeal for practical righteousness, and the simplicity of the faith of the followers of Fox, put a hall-mark on the sensitive youth which the rough usage of the world never obliterated. No account of Bartlett's early life and school-days exists—an index that they were happy and peaceful. We may read in his poem called *An Allegory*, certain autobiographical details, transferring the

> Meadow and field, and forest, dale, and hill;
> Orchards, green hedgerows, gardens, stately trees,

from the old England which he describes to the banks of Narragansett Bay. Paraphrasing other parts of the poem, we may say that auspicious stars shone over his cradle with the kindliest light and promise, and amid the genial air of a New England home, goodness, truth, and beauty were his portion. He tells of the wonder and delight stirred in his young soul by the thousand tales of 'fairies and genii, giants, dwarfs, and that redoubtable and valiant Jack who slew the giants'. Then, as the days lengthened, he came under the spell of *The Arabian Nights* and of *Robinson Crusoe*. Looking back in after years, he compared this hearty, wholesome life to some bounteous spring that wells up from the deep heart of the earth. Addison, Goldsmith, and Washington Irving filled his soul with freshness like the dawn,

> And led by love and kindness, ran the hours
> Their merry round till boyhood passed away.

In the ruder discipline and strife of school and college he grew to manhood with (as he expressed it) 'a fine free healthfulness', and with faculties self-poised and balanced.

At Smithfield, at Uxbridge, and at a well-known

Friends' institution in New York, Bartlett obtained a very thorough preliminary education. Details of his medical course are not at hand, but we know that after studying with Dr. Willard, of Uxbridge, Drs. Greene and Heywood, of Worcester, and Dr. Levi Wheaton, of Providence, and attending medical lectures at Boston and at Providence, he took his doctor's degree at Brown University in 1826, a year before the untimely end of the medical department [1].

In June, 1826, Bartlett sailed for Europe, and the letters to his sisters, which, with other Bartlett papers, have been kindly sent me by his nephew, the Hon. Willard Bartlett, of the New York Court of Appeals, give a delightful account of his year as a student abroad. He remained in Paris until December; then, in company with his fellow student, Dr. Southwick, he visited the chief cities of Italy, returning to Paris early in March. The month of May, 1827, was spent in London, and he sailed from Liverpool June 8. Unfortunately the letters to his sisters contain very few

[1] Parsons closes his *Historical Tract on the Brown University Medical School* with the sentence, 'Whether this city, the second in New England, shall become the seat of such a school (that is, a revived department of medicine) must depend very much on the zeal, persistence, and ability of its physicians.' May I be permitted to remark, Mr. President, that the existing conditions are singularly favourable for a small first-class school. Here are college laboratories of physics, chemistry, and biology, and here are well-equipped hospitals with some three hundred beds. What is lacking? Neither zeal, persistence, nor ability on the part of the physicians, but a generous donation to the University of a million of dollars with which to equip and endow laboratories of anatomy, physiology, pathology, and hygiene. These alone are lacking; the preliminary scientific school is here; the clinical school is at your doors; the money should be the least difficult thing to get in this plutocratic town. The day has come for small medical schools in university towns with good clinical facilities.

references to his medical studies, but I have extracted a few memoranda from them.

Writing August 24, 1826, he says:

'The celebrated Laennec died at his country residence on the 13th of the present month. The publication in 1819 of a new method of ascertaining diseases of the chest forms an era in the history of medicine. M. Laennec fell a victim to one of those diseases the investigation of which by himself has enriched the field of science, contributed to the alleviation of human suffering, and given his own name a high rank among the great and good men of his age.'

He asked that this memorandum should appear in the Providence papers.

Writing September 4, he speaks of attending every day at the Jardin des Plantes to hear the lectures of Cloquet and Cuvier.

One of the professors at the medical school, he says, looked more like a jolly stage-driver or a good-natured, blustering butcher than anything else.

'He lectures sometimes standing, and sometimes leaning against a post, or straddling over a high stool, flourishing a lancet in one hand and a snuff-box in the other, on the contents of which he is continually laying the most inordinate contributions. He wears during the time an old rusty-looking black cap. The familiarity of the distinguished surgeons and physicians with their students struck me at first sight very forcibly, being in such perfect contrast to the proud port and haughty carriage of some of our New England professors. I wish they might step into the Hôtel Dieu and La Charité, and take a lesson or two of Boyer and Dupuytren, barons of the Empire, and two of the most distinguished surgeons in the world.'

In the letter of October 10th, he says:

'The public lectures opened this week, and we are continually engaged from half-past six in the morning till bed-time. Visits are made at all the hospitals by

candle-light, and a lecture delivered at most of them immediately after the visit.'

He speaks of attending the lectures of Geoffroy St. Hillaire, who, he says, 'lectures very badly; his gestures, though he is a Frenchman, are exceedingly awkward, and he has a sing-song tone like that which one often hears in a Methodist or Quaker preacher.'

Like Oliver Wendell Holmes, Bartlett probably acquired in Paris three principles: 'Not to take authority when I can have facts; not to guess when I can know; not to think a man must take physic because he is sick.'[1]

Strangely enough, I find no reference in these Paris letters to the man of all others who influenced Bartlett most deeply. In Louis, even more than in Laennec, the young American students of that day found light and leading. The numerical method, based on a painstaking study of all the phenomena of disease in the wards and in the dead-house, appealed with peculiar force to their practical minds, and Louis' brilliant observations on phthisis and on fevers constituted, as Bartlett remarked, a new and great era in the history of medical science. I cannot find any definite statement of Bartlett's relations with Louis in 1826–7, at which period the latter was still working quietly at La Charité. His monograph on phthisis had been published in 1825, and had at once given him a reputation as one of the great lights of the French school. He was at this time very busy collecting material for his still more important work on typhoid fever, and it is scarcely possible that Bartlett could have frequented La Charité without meeting the grave, unobtrusive student, who, with notebook in hand, literally lived in the wards and in the dead-house. Secluded

[1] Morse's *Life of Holmes*, vol. i, p. 109.

from the world, living as a voluntary assistant to Chomel in this quiet haven of observation, apart from the turbid seas of speculation which surged outside, Louis for seven years pursued his remarkable career. Whether or not Bartlett came into personal contact with him at this time I do not know, but however this may be, subsequently the great French clinician became his model and his master, and to him he dedicated his first edition of the *Fevers*, and his *Essay on the Philosophy of Medical Science.*

For a young man of twenty-two, these letters—written off-hand—show an unusually good literary style, and many incidental references indicate that he had received a general education much above the average. The strong Christian spirit which he felt all through life is already manifest, as may be gleaned from one or two expressions in the letters. Writing on Sept. 4, 1826, to his sisters, he refers to the death of a dear friend and her little sister: 'There is a cheering consolation in the reflection that "of such is the kingdom of heaven", and that their spirits have gone in perfect and sinless purity to their home of bliss, and we may believe that they in their turn have become guardian angels to those who cherished and protected them here:

> They were their guardan angels here,
> They guardian angels now to them.'

In 1827, shortly after completing his twenty-third year, Bartlett settled at Lowell, then a town of only 3,500 inhabitants, but growing rapidly, owing to the establishment of numerous mills. This was his home for nearly twenty years, and to it, and later to Woonsocket, he returned in the intervals between his college work in different sections of the country. As Dr. D. C. Patterson

remarks, 'He became at once the universal favourite, and began to take a deep interest in the physical welfare of the townsmen.' In 1828 he delivered lectures before the Lowell Lyceum on contagious diseases, and he gave frequent popular lectures on sanitation and hygiene. In 1828 he was the orator on the Fourth of July. In 1836 he delivered a course of popular lectures on physiology.

Evidently Bartlett had the 'grace of favour' in a remarkable degree. Bishop Clark pictures him in those days in the following words:

'Some twenty-five years ago, I used to meet a young man in the town of Lowell, whose presence carried sunshine wherever he went: whose tenderness and skill relieved the darkness of many a chamber of sickness, and whom all the community were fast learning to love and honour. Life lay before him, full of promise; the delicate temper of his soul fitting him to the most exquisite enjoyment of all the pure delights of nature, and his cheerful temperament giving a genial and generous glow to the refined circles of which he was one of the chiefest ornaments.'

When only thirty-two, before he had been in Lowell ten years, he was elected by a respectable majority as the first mayor of the city, and he was re-elected the following year. A letter from the Hon. Caleb Cushing, dated April 20, 1841, gives us an idea of the estimate which a clear-headed layman placed upon him. 'Dr. Bartlett enjoys in the city of Lowell the unqualified respect of that community, and its affectionate esteem—respect and esteem due alike to his public relations to that city, as formerly its popular and useful chief magistrate, and at all times one of its most patriotic and valued citizens; to his unblemished integrity of character and amenity of deportment; to his eminence in his pro-

fession ; to the endearments of private friendship ; and in general to his talents, accomplishments, manners, and principles.'

To two interesting episodes in his life at Lowell I may refer at greater length. The rapid growth of the industries in Lowell had brought in from the surrounding country a very large number of young girls as operatives in the mills, and their physical and moral condition had been seriously impugned by writers in certain leading Boston papers. These charges were investigated in a most thorough way by Bartlett, who published in the *Lowell Courier* in 1839, and republished in pamphlet form (1841) his well-known *Vindication of the Character and Condition of the Females Employed in the Lowell Mills.* This very strong paper, based on careful personal investigations, really proved to be what the title indicated. It did not, however, escape adverse criticism, and among the Bartlett papers there is a review of the *Vindication* by a citizen of Lowell in 1842, which presents the other side of a picture, by no means a pleasant one, of the prolonged hours of the operatives and their wretched life in boarding-houses.

One of the most interesting incidents of his life at this period was the reception to Dickens, whose visit to Lowell occurred during Dr. Bartlett's mayoralty. In the *American Notes* Dickens speaks of the girls as 'healthy in appearance, many of them remarkably so, and had the manners and deportment of young women, not of degraded brutes of burden.' Oliver Wendell Holmes says, referring to this occasion: 'I have been told a distinguished foreign visitor (Charles Dickens), who went through the whole length and breadth of the land, said that of all the many welcomes he received from statesmen renowned as orators, from men whose

profession is eloquence, not one was so impressive and felicitous as that which was spoken by Dr. Bartlett, then mayor of Lowell, our brother in the silent profession, which he graced with these unwonted accomplishments.'

In 1840 he was elected to the Legislature of the State of Massachusetts and served two terms. In 1845 he was nominated by the Governor a member of the Board of Education of the State in the place of Jared Sparks. Holmes, who was familiar with Bartlett in this period of his career, has left on record the following charming description:

'It is easy to recall his ever-welcome and gracious presence. On his expanded forehead no one could fail to trace the impress of a large and calm intelligence. In his most open and beaming smile none could help feeling the warmth of a heart which was the seat of all generous and kindly affections. When he spoke his tones were of singular softness, his thoughts came in chosen words, scholarlike, yet unpretending, often playful, always full of lively expressions, giving the idea of one that could be dangerously keen in his judgements, had he not kept his fastidiousness to himself, and his charity to sheathe the weakness of others. In familiar intercourse—and the writer of these paragraphs was once under the same roof with him for some months—no one could be more companionable and winning in all his ways. The little trials of life he took kindly and cheerily, turning into pleasantry the petty inconveniences which a less thoroughly good-natured man would have fretted over.'

II

For many years there was in this country a group of peripatetic teachers who went from town to town, like the Sophists of Greece, staying a year or two in each, or divided their time between a winter session in a large city school and a summer term in a small country one.

Among them Daniel Drake takes the precedence, as he made eleven moves in the course of his stirring and eventful life. Bartlett comes an easy second, having taught in nine schools. Dunglison, T. R. Beck, Willard Parker, Alonzo Clark, the elder Gross, Austin Flint, Frank H. Hamilton, and many others whom I could name, belonged to this group of wandering professors. The medical education of the day was almost exclusively theoretical; the teachers lectured for a short four months' session, there was a little dissection, a few major operations were witnessed, the fees were paid, examinations were held—and all was over. No wonder, under such conditions, that many of the most flourishing schools were found amid sylvan groves in small country towns. In New England there were five such schools, and in the State of New York the well-known schools at Fairfield and at Geneva. As there was not enough practice in the small places to go round, the teachers for the most part stayed only for the session, at the end of which it was not unusual for the major part of the faculty, with the students, to migrate to another institution, where the lectures were repeated and the class graduated. T. R. Beck's introductory lecture, in 1824, at Fairfield, *On the Utility of Country Medical Institutions*, pictures in glowing terms their advantages. One sentence brought to my mind the picture of a fine old doctor, on the Niagara peninsula, a graduate of Fairfield, who possibly may have listened to this very address. Dr. Beck asks: 'What is the clinical instruction of the country student? It is this—after attending a course of lectures on the several branches of medicine and becoming acquainted with their general bearing, he during the summer repairs to the office of a practitioner; attends him in his visits to his patients; views the

diseases peculiar to the different districts; observes the treatment that situation or habits of life indicate, and from day to day verifies the lessons he has received. Here, then, is a direct preparation for the life he intends to pursue.' And I may say that it was just this training that made of my old friend one of the best general practitioners it has ever been my pleasure to know.

In the letters we can follow Bartlett's wanderings during the next twenty years, from the time of his appointment to one of the smallest of the schools to his final position as one of the chief ornaments of the leading school of New York. In 1832 he held his first teaching position, that of professor of pathological anatomy and of materia medica in the Berkshire Medical Institute, at Pittsfield. The following is an extract from a letter to Dr. John Orne Green, dated Pittsfield, November 25, 1833:

'The character of the class is said to be superior even to that of last year. We have a large number of excellent students. Parker is as popular as ever, and Professor Childs has the credit of having improved very much in his manner of teaching. The members of the class are attentive to their studies, eager for knowledge, and regular in their attendance on the lectures. I have lectures, most of the time, twice a day, at 10 a.m. and at 2 p.m. I shall finish my course on materia medica by the middle of this week, and the remainder of my time will be occupied with lectures of medical jurisprudence and pathological anatomy. The commencement will be on Wednesday of week after next.'

He held the chair at Pittsfield for eight sessions. Among his colleagues were Childs, Dewey, and Willard Parker, who was a very special friend. In a letter of October 2, 1836, he says: 'Parker, with his sunny face and his hearty welcome, was in a few minutes after my arrival. It does one good to meet such men.'

In 1839 he was appointed to the chair of practice in Dartmouth College, Hanover, N.H., the school founded by Nathan Smith in 1798. In a letter to his friend, Green, dated September 8, he gives brief sketches of some of his colleagues, among them a delightful account of Oliver Wendell Holmes, then a young man of thirty.

'Dr. Holmes you know something of. As a teacher there is no doubt of his success, although he will not show himself during this his first course. He has his anatomy—some of it at least—to study as he goes on, and he has not yet got the whole hang of the lecture-room—he does not give himself his whole swing. His attainments in medical science are extensive and accurate, and his intellectual endowments are extraordinary. His mind is quick as lightning and sharp as a razor. His conversational powers are absolutely wonderful. His most striking mental peculiarities consist in a power of comprehensive and philosophical generalization on all subjects, and in a fecundity of illustration that is inexhaustible. His talk at table is all spontaneous, unpremeditated, and he pours himself forth—words and thoughts—in a perfect torrent. His wit and humour are quite lost in the prodigal exuberance of his thoughts and language.'

In this same letter is the following characteristic memorandum, illustrating his desire to see the school-houses beautified and adorned.

'One word about the High School House. Pray, don't forget in the planning of the rooms my plan for some embellishments. Even if we should get some busts I do not know that niches would be any better than suitable stands or shelves. I hope we shall raise, by a fair, from five hundred to one thousand dollars for pictures, &c., for ornaments to the two principal rooms.'

It is quite possible that Bartlett lectured both at Woodstock and at Pittsfield, as the terms were pur-

posely arranged so as not to clash, and in the catalogue of the Vermont Medical College, 1844, there is an advertisement of the Berkshire school. The names of Bartlett and Holmes occur only in the 1839-40 and 1840-1 announcements.

In 1841 he accepted the chair of the theory and practice of medicine in the Transylvania University, Lexington, at that time the strongest and best equipped school in the West.[1] On his way to Lexington he visited New York, Philadelphia, Washington, and Baltimore, and in a letter to Green, of September 7, 1841, he gives an interesting account of the men he met in these cities. One item is of interest to Baltimoreans:—

'Day before yesterday I spent with Dr. Nathan R. Smith, at Baltimore, on my return from Washington. I found him very attentive and hospitable. He took me into his gig and went to see some of his patients. He has a pretty large surgical practice, and is, I should think, a man of excellent sound sense, industrious and devoted to his profession—not so *great* a man as his father, but a very capital good fellow. He speaks well of Lexington and the school—says it is the best appointed school in the country.'

In his letters there are interesting descriptions of his life in Lexington, some of which are worth quoting:

'In the school we are getting on very well. The class is of a good size, rather larger than last year, worth a little over $2,000, intelligent, attentive, well-behaved. I have given fifty-eight lectures, and we have just six weeks more. My own success has been good enough, I think. So far as I have means of judging, my instruction is entirely satisfactory, to say the least. My colleagues—Dudley, you know, is the great man here. He has many peculiarities. He is very much pleased with me. He teaches singular doctrines, and

[1] *History of the Medical Department of Transylvania University and its Faculty*, by Dr. William J. Calvert, *Johns Hopkins Hospital Bulletin*, August, September, 1899.

follows, in many things, a practice very peculiar to himself. The other day he tied the common carotid before the class in an anastomosing aneurism in the orbit; patient from St. Louis. Day before yesterday he cut for the stone; patient a lad from Mississippi. He has two more cases of stone here for operation. He is exceedingly cautious; sends many patients, of all sorts, away without operation. Uses the bandage for everything almost in surgery—tart. ant. and starvation, or low diet, in most diseases. He had a pretty large property, "a garden" as he calls it, of 150 acres or so, a mile from the city. Richardson, in obstetrics, boards with me, a plain common-sense man, who fought a duel in early life with Dudley; has made a pretty large fortune here in practice, and now lives in the country eight miles or so from here, on a farm of 500 acres. The style of lecturing here is quite different from what it is in the East—more emphatic, more vehement. It is quite necessary to fall somewhat into the popular style. We stand, in the lecture room, on an open platform with only a little movable desk or table, on which to lay our notes. On the whole I like it better than being seated in a desk, as they are in Boston.' (December 21, 1841.)

In March, 1843, he writes to Green that his receipts for the session have been more than $2,000.

'There are a few good families who send for me, and I get occasionally a consultation. We never make a charge less than a dollar; and consultation visits in ordinary cases—the first visit—are $5.00. These few enable me, situated as I am, to make even a small and easy business somewhat profitable. I have made one visit twenty-five miles distant, for which the fee was $25; and I saw a second patient, at the same time, incidentally, for $5.00 more. You see from all this, that my place gives me rather more money than I could earn in Lowell, for a much smaller amount of responsibility and labour. I have hardly, indeed, been called out of bed during the winter. In a business point of view I feel quite content with my situation.'

From an interesting account of a consultation in the

country we can gather how the planters of those days did their own doctoring:

'Col. Anderson belongs to a class of men, pretty large, I think, in this State,—rather rough, with a limited school education, but intelligent, shrewd, clear-headed, and enterprising. He has a farm, entirely away from any travelled road, of 500 acres; but his principal business is that of bagging and soap manufacturing, his farm serving only to feed his family. This consists of about one hundred, eighty or more of which are his negroes. He has no physician, whom he is willing to trust, nearer than Lexington; and in nearly all common acute diseases treats the patient himself. His daughter, Mrs. Breck, was seized with acute pleurisy, soon after miscarriage, and her father had bled her twice, pretty freely, and given calomel and antimony, before any physician had seen her. He had followed the same course a year ago in the case of his wife.' (February 18, 1844.)

In the same letter he says:

'Typhoid fever has been very widely prevalent in many parts of Kentucky for the past year. There were, it is said, 200 deaths in an adjacent county last summer and fall. It is evidently the common fever of this country, with all the features so familiar to us at the East.'

In the autumn of 1844 he accepted the chair of the theory and practice of medicine at the University of Maryland. Among the letters I find but one from Baltimore, and that is to Oliver Wendell Holmes about a review of his book, *The Philosophy of Medical Science*, which had appeared that year.

In 1844 he accepted the chair of materia medica and obstetrics in the Vermont Medical College, the session of which began in March and continued for thirteen weeks. Among his colleagues were Alonzo Clark, Palmer, and Edward M. Moore, and later John C. Dalton. Bartlett's name occurs in the catalogues of the school until 1854, the year before his death.

In May, 1845, he and Mrs. Bartlett sailed for Europe. In a letter to Green, July 12, there is an interesting reference to Louis and James Jackson, jun.:

'I have seen a good deal of Louis, who has been very civil and attentive. I dined with him soon after my arrival, and met there, amongst others, Leuset and Grisolle, two of his most intimate medical friends. I never see him that he does not speak of young Jackson—*ce pauvre Jackson*, as he calls him. He told me, with a great deal of feeling, that Jackson, the last night that he spent in Paris, wrote him a letter from his hotel, which was moistened with his tears, and that he thought Jackson was almost as much attached to him as to his father.'

In another letter he speaks, too, of his very cordial reception by Louis.

They spent the winter on the Continent, travelling about, chiefly in Italy, and in the spring went to London. In a letter dated June 17, 1846, there is an interesting sketch of a magnetic séance at the house of Professor Elliotson, of University College, who subsequently came to such grief over hypnotism.

'And then he ran full tilt off upon his hobby, "animal magnetism," calling it one of the most sacred and holy of all subjects, one of the greatest truths, and so on. Dr. Forbes, the editor, he spoke of as "a wretch", all because the doctor has shown up some of Elliotson's magnetic operations. Dr. E. afterwards invited me to see some magnetic phenomena at his house. I went about 3 o'clock in the afternoon, and found his spacious and elegant drawing-room quite filled with well-dressed gentlemen and ladies, assembled for the same purpose. The doctor had two subjects, one a young, delicate-looking girl, and the other a damsel of a certain age, upon whom he performed the standard and stereotyped experiments—putting them into the magnetic sleep, stiffening their limbs, leading them round the room with a common magnet, exciting their phrenological

organs, and so on. I can only say that I was not specially delighted with Elliotson's manner, and that if I was to choose a man by whom I should swear, without using my own eyes, certainly it would not be him.'

In the same letter he speaks of having seen a great deal of Forbes, editor of the *Medico-Chirurgical Review*; of Marshall Hall, of Walshe, 'a young man and a good fellow'; of Sir Henry Holland, and of that interesting American physician, who lived so long in England, Dr. Boott, and of Dr. Southwood Smith at the Fever Hospital.

On his return from Europe we find him during the session of 1846–7 in his old chair at Lexington, whence he writes on March 18, 1847, to his friend Green, from which a paragraph relating to the second edition of his book on *Fevers* may be quoted:

'I have been drudging away all winter at my second edition. I do not feel any great interest in it, though I hope and intend to make a good book of it. The first edition, for a monograph, has sold very well, mostly at the South and West; so well at least that Lea & Blanchard propose publishing the second edition and paying also something for the right to do so.'

The sessions of 1847-8-9 were spent at the Transylvania University. In the spring of 1848 there is a letter from Pliny Earle, dated April 16, saying that he had received a catalogue of the Medical Department of Transylvania University, from which he had received his first intimation of Bartlett's resignation of the professorship. He asks Bartlett's advice as to the propriety of applying for the position.

On March 13, 1849, Bartlett received the appointment as professor of the theory and practice of medicine in the University of Louisville. At this time, in a letter from

Dr. J. Cobb, we have the first intimation in the letters of ill health, as there is the sentence: 'Accept my best wishes for your complete restoration to health.' The University of Louisville had drawn heavily upon the classes of the other Western schools, chiefly at the expense of Lexington, and the Faculty when Bartlett joined it was very strong, comprising such well-known men as the elder Gross, the elder Yandell, Rogers, Benjamin Silliman, jun., and Palmer.

The condition of medical politics at that time in the town of Louisville was not satisfactory; a new school had been started in opposition to the University, and among the Bartlett letters are a number from the elder Yandell which show a state of very high tension. Bartlett spent but one session in Louisville. He and Gross accepted chairs in the University of New York. The appointment of the former to the chair of the institutes and practice of medicine is dated Sept. 19, 1850. From some remarks in a letter from Yandell it is evident that Bartlett did not find the position in New York very congenial. Gross found his still less so, and returned to Louisville the following year. J. W. Draper, the strong man of the University School, had secured Bartlett, and in a letter dated Aug. 12, 1850, he promised him a salary of at least $3,500. The same letter shows how thoroughly private were the medical schools of that day:

'It perhaps may be proper to repeat what is the condition of the real estate. The college building is owned equally by the six professors. Its estimated value when Dr. Dickson left us in the spring was $78,600, and there is a mortgage upon it of $48,000, bearing interest of six per cent. Excluding this mortgage the share of each professor is therefore $5,000, and a mutual covenant exists among us that on the retirement or

decease of one of the Faculty his investment shall be restored to him or his heirs—the new-comer starting in all respects in the position he occupied.'

During these years Bartlett seems to have been very busy at work at the microscope, and there is a letter from Alonzo Clark, dated June 15, 1848, descriptive of a fine new Oberhauser (the Zeiss of that day), and in 1851 there is an interesting letter from Jeffries Wyman, giving a list of the most important works on invertebrate zoology,

Among his colleagues in the University were Draper, Martyn Paine, and Granville Sharp Pattison. Things do not seem to have worked very smoothly. In the spring of 1851 overtures were made to him from the College of Physicians and Surgeons of New York, in which Faculty were his warm friends, Alonzo Clark and Willard Parker, and he was elected to the chair of materia medica and medical jurisprudence in the following year, 1852. Here he lectured during the next two sessions until compelled by ill health to retire.

I may fittingly conclude this section of my address with a sentence from a sketch of Bartlett's life by his friend Elisha Huntington :

'Never was the professor's chair more gracefully filled than by Dr. Bartlett. His urbane and courteous manners, his native and simple eloquence, his remarkable power of illustration, the singular beauty and sweetness of his style, all combined to render him one of the most popular and attractive of lecturers. The driest and most barren subject, under his touch, became instinct with life and interest, and the path, in which the traveller looked to meet with briars and weeds only, he was surprised and delighted to find strewn with flowers, beautiful and fragrant. There was a magic about the man you could not withstand ; a fascination you could not resist.'

III

Bartlett began his career as a medical writer with the *Monthly Journal of Medical Literature and American Medical Students' Gazette*, only three numbers of which were issued. He says in the introductory address, dated Oct. 15, 1831, that there are plenty of practical journals of high character and extensive circulation, but he wishes to see one devoted to

'medical history, medical literature, accounts of medical institutions and hospitals, medical biography, including sketches of the character, lives, and writings of the chief masters of our art, and of all such as have in any way influenced its destinies and left the deep traces of their labours on its history. . . . To the medical student and the young practitioner, to all those who aspire to any higher acquisitions than the knowledge that calomel purges and salivates, and that tartarized antimony occasions vomiting, who are not willing to rest supinely satisfied in a routine familiarity with doses and symptoms —a familiarity which practice and habit render in the end almost mechanical—we cannot but think these matters must be interesting.'

And he adds:

'The devotion of an occasional hour to such pursuits must have a tendency to enlarge and liberalize the mind. It will help to keep alive and stimulate in the young medical scholar the sometimes flagging energies of study. By calling his attention and directing his desires to high standards of acquisition and excellence, it will urge him on towards their attainment. Delightful and fascinating, in many respects, as the study of his profession may be to him, there are many hours which must be occupied with mental and bodily drudgery. He must make what to others would be loathsomeness pleasure to himself. Amid the wear and tear, the toil and fatigue of such pursuits, he needs at times some intellectual recreation and stimulus, and where can he find one pleasanter or more appropriate than in surveying the career, and studying the characters of those who have trodden before him the same laborious path,

and who have followed it on to its high and bright consummation? If our profession ever vindicates its legitimate claim to the appellation of liberal, it must be cultivated with some other than the single aim of obtaining patients for the sole purpose of getting for services rendered an equivalent in fees.'

In the first number there is a statement that on a future occasion the *Journal* will give a 'detailed consideration of the character of the old physician of Cos—the venerable father of physic, and of the reform which he effected in medical science', a promise which was not fulfilled to the profession for many years, as Bartlett's well-known lecture on Hippocrates, the last, indeed, of his professional writings, was not issued until 1852. The literature of science, its philosophy, its history, the history of the lives and labours of the founders and cultivators—these he believed it important for the student to cultivate.

Among the articles in these three numbers there are some of special merit. One signed S. N., *On the Claims of Medicine to the Character of Certainty*, may have suggested to Bartlett his well-known essay, *On the Degree of Certainty in Medicine*. The enterprise was not a success, and as Bartlett had said in his introductory address, 'of all *weakly* things we most heartily pity weakly periodicals,' he had the good sense after three numbers had been issued to give up a publication which the profession did not sustain.

In July, 1832, he became associated with A. L. Pierson and J. B. Flint in a much more pretentious and important journal, the *Medical Magazine*, a monthly publication which continued for three years. It was a very well-conducted periodical, with excellent original articles and strongly written editorials. John D. Fisher's original paper on *The Cephalic Brain Murmur* occurs

in volume ii, and in the same one is an excellent paper by E. Hale, jun., on *The Typhoid Fever of this Climate*, which is of special interest as containing very accurate statements of the differences between the common New England autumnal fever and the typhus as described by Armstrong and Smith. There are also reports of three autopsies giving an account of ulceration in the small intestine, among the first to be published in this country. There are in addition numerous well-written critical reviews. Among the latter is one of the most virulent productions of that most virulent of men, Dr. Charles Caldwell. It is entitled *Medical Language of Literature*. I have heard it said in Philadelphia that Dr. Samuel Jackson never forgave the bitterness of the attack in it upon his *Principles of Medicine*.

In volume iii there was the interesting announcement that a dollar a page would be paid for all original communications.

In 1831 appeared a little work entitled *Sketches of the Character and Writings of Eminent Living Surgeons and Physicians of Paris*, translated from the French of J. L. H. Peisse. Of the nine lives, those of Dupuytren and Broussais are still of interest to us, and there is no work in English from which one can get a better insight into the history of medicine in Paris in the early part of the nineteenth century. One little sentence in the translator's preface is worth quoting:

'After making all reasonable allowance for natural tact or talent, and for the facilities and advantages of instruction to be had in extensive medical establishments, it will be found that *study*, intense, untiring, unremitted *study*, is the only foundation of professional worth and distinction.'

A great stimulus had been given to the study of phrenology by the visit of Spurzheim to this country.

He gave a course of six lectures on the anatomy of the brain and spinal cord at one of the apartments of the Medical College in September of that year, and subsequently a popular course of lectures on phrenology. In 1832 he died in Boston of typhus fever. His brain, it is stated, was in the possession of the Boston Phrenological Society, before which, in January, 1838, Bartlett gave an interesting address on scientific phrenology.

In 1839 Bartlett edited Paley's *Natural Theology*, that delightful book, dear especially to those of us who were trained in religious colleges. To some of us at least the freshness of the natural theology, which in Paley's hands was really a delightful commentary on anatomy and physiology, was a happy change from artificial theology, or even from the *Horae Paulinae* of the same author.

Bartlett's claim to remembrance, so far as his medical writings are concerned, rests mainly on his work on *Fevers*, issued first in 1842, and subsequently in the years 1847, 1852, and 1857. It remains one of the most notable of contributions of American physicians to the subject. Between the time of Bartlett's visit to Paris and 1840, a group of students had studied under Louis, and had returned to this country thoroughly familiar with typhoid fever, the prevalent form in the French capital at that time. In another place [1] I have told in detail how largely through their labours the profession learned to recognize the essential differences between the two prevalent forms of fever, typhoid and typhus. The writings on fever chiefly accessible to the American reader of that day were the English works of Fordyce,

[1] 'Influence of Louis on American Medicine,' *Johns Hopkins Hospital Bulletin*, August-September, 1897 (printed at p. 189 of this volume).

Armstrong, Southwood Smith, and Tweedie, in which, as Bartlett says, 'they describe a fever or form of fever (that is typhus) rarely met with in this country,' and the writings did not actually represent the state of our knowledge upon the subject. Indeed, for a number of years later a chaotic condition of mind prevailed among writers in Great Britain, and it was not until 1849–50 that William Jenner, by a fresh series of accurate observations, brought the British medical opinion into line. As the *British and Foreign Medico-Chirurgical Review*, in a most complimentary notice of Bartlett's work, said, 'A history of British fevers such as Louis has furnished to France, or such as given in the volume under discussion, did not exist.' Still, even at that date, 1844, the *Review* expressed the ultra-conservative opinion held in England, that the common continued fever, or the low nervous fever of Huxham, was only a mild form of typhus fever. The work is dedicated to his friends, James Jackson, of Boston, and W. W. Gerhard, of Philadelphia; it is, he states, 'a history of two diseases, many points of which they, especially among his own countrymen, have diligently and successfully studied and illustrated.'

The chief interest of the work to-day lies in the remarkably accurate picture which is given of typhoid fever—a picture the main outlines of which are as well and firmly drawn as in any work which has appeared since. It is written with great clearness, in logical order, and he shows on every page an accurate acquaintance with the literature of the day, and, as the author of the review already mentioned remarks, a knowledge also of that best of books, the book of nature.

The practical character of Bartlett's mind is indicated by the briefness with which he discusses the favourite

topic of the day, namely the theory of fever. He acknowledged at the outset that the materials for any satisfactory theory of typhoid fever did not exist. He went so far as to claim that the fundamental primary alteration was in the blood, and that the local lesion was really secondary, and he refers to the prevalent theory of fever as 'wholly a creation of fancy; the offspring of a false generalization and of a spurious philosophy. What then can its theory be but the shadow of a shade?' This work immediately placed Bartlett in the front rank of American physicians of the day. It had a powerful influence on the profession of the country. Among his letters there is an interesting and characteristic one from James Jackson, already referred to in the dedication. Acknowledging the receipt of a copy, he says:

'I am now writing to express to you the great satisfaction the book has given me. I think that it entirely answers the end that you proposed. It, in fact, translates to the common reader, in a most clear style and lucid method, the acquisitions which science has made on its subjects within the last few years. Nowhere else can the same comprehensive view of those subjects be found. What may be the conclusions of medical men in regard to essential fevers twenty years hence I would not pretend to say. It is certain their views have changed very much within a shorter period, and if new discoveries are made in ten years to come I doubt not you will be ready to change yours. We must take to-day the truth so far as we know it, and add to it day by day as we learn more.'

It is evident from his letters that the success of the work on fevers was a great gratification to Bartlett. The second edition was issued in 1847, and while the history of typhoid and typhus fever remained much in the same state, with certain additions and developments, the subject of periodical and yellow fevers was greatly

extended. The third edition was issued in 1852. The fourth edition was edited by Bartlett's friend, Alonzo Clark, of New York. The dedication of the second, third, and fourth editions was to Dr. John Orne Green, of Lowell, 'with whom the early and active part of the writer's life was passed; in a personal friendship which no cloud, for a single moment, ever shadowed or chilled; and in a professional intercourse whose delightful harmony no selfish interest or personal jealousy ever disturbed.'

From every standpoint *Bartlett on Fevers* may be regarded as one of the most successful works ever issued from the medical press, and it richly deserves the comment of the distinguished editor of the fourth edition:

'The question may be fairly raised whether any book in our profession illustrates more clearly the beauties of sound reasoning and the advantages of vigorous generalization from carefully selected facts. Certainly no author ever brought to his labour a more high-minded purpose of representing the truth in its simplicity and in its fullness, while few have been possessed of higher gifts to discern, and gracefully to exhibit it.'

An Essay on the Philosophy of Medicine, 1844, a classic in American medical literature, is the most characteristic of Bartlett's works, and the one to which in the future students will turn most often, since it represents one of the most successful attempts to apply the principles of deductive reasoning to medicine, and moreover illustrates the mental attitude of an acute and thoughtful observer in the middle of the century. The work consists of two parts: in the first science is defined and its canons laid down. Ascertained facts, with their relations to others, obtained by observation or experience, and generalized into laws and principles—this constitutes

science. He dwells upon the hurtfulness of theories, and sketches in an interesting manner Newton's position as an observer and as a theorist: 'If he (Newton) bowed at any time or in any degree his strong neck to the yoke of hypothesis, it was always with a perfect consciousness of his ability at will to shake it off, as the lion shakes the dew-drop from his mane.' He quotes from Sir Humphrey Davy: 'When I consider the variety of theories that may be formed on the slender foundation of one or two facts, I am convinced that it is the business of the true philosopher to avoid them altogether.'

Bartlett is the strongest American interpreter of the modern French school of medical observation, which

'is characterized by its strict adherence to the study and analysis of morbid phenomena and their relationships; by the accuracy, the positiveness, and the minute detail which it has carried into this study and analysis; and by its rejection as an essential or legitimate element of science of all *a priori* reasoning or speculation. The spirit which animates and guides and moves it is expressed in the saying of Rousseau, "that all science is in the facts or phenomena of nature and their relationships, and not in the mind of man, which discovers and interprets them." It is the true *protestant* school of medicine. It either rejects as apocryphal, or holds as of no binding authority, all the traditions of the fathers, unless they are sustained and sanctioned by its own experience.'

There are weak points in his arguments, some of which are well pointed out in an able article in the *British and Foreign Medico-Chirurgical Review* (July, 1845), but it is the work of a strong and thoughtful mind, and for a time, at least, it had a powerful influence in the profession. A contemporary writer, Samuel Henry Dickson[1], speaks of it in the following terms:

[1] Gross, *American Medical Biography*, 1861, p. 750.

'It was particularly well-timed, and addressed effectively to the requirements of the profession, at the period of its publication, It breathes a spirit of thoughtful and considerate scepticism, which was then needed to temper the headlong habit of confident polypharmacy prevalent over our country. . . . When addressed, however, by Bartlett, on this side of the Atlantic, and on the other by Forbes, he (the orthodox disciple) stopped to listen and consider. These gifted men spoke with authority; they pleaded impressively, eloquently, wisely. If, in the natural ardour of controversy, they went somewhat too far, let that slight fault be forgiven for the great good they accomplished. Nay, let them be honoured for the courage and frankness with which they attacked prevalent error, and risked their popularity and position by assailing modes of practice rendered familiar by custom, and everywhere adopted and trusted to.'

In 1848 appeared one of Bartlett's most characteristic works, a little volume of eighty-four pages, entitled, *An Inquiry into the Degree of Certainty of Medicine, and into the Nature and Extent of its Power over Disease.* The iconoclastic studies of Louis and certain of the Paris physicians, and the advocacy of expectancy by the leaders of the Vienna school, had between 1830 and 1850 disturbed the profession not a little, and in 1846 appeared an article by Dr. Forbes, in which, as Bartlett said, were drawn 'in strong and exaggerated colours the manifold imperfections of medical science and the discouraging uncertainties of medical art.' These circumstances had combined to shake and disturb the general confidence in the profession, with the effect that 'the hold which medicine has so long had upon the popular mind is loosened; there is a widespread scepticism as to its power of curing diseases, and men are everywhere to be found who deny its pretensions as a science, and reject the benefits and blessings which it proffers them as an art.' To Bartlett it appeared

high time to speak a clear and earnest word for the science which we study and teach, and for the art which we inculcate and practise, and in this essay he set himself the task of vindicating the claims of medicine to the regard and confidence of mankind. In his endeavour 'to show how far and with what measure of certainty and of constancy we are able to control, to mitigate, and to remove disease' Bartlett occupied at the outset very advanced ground for that date. We must remember that the general body of the profession had the most implicit confidence in drugs, and polypharmacy was almost as much in vogue as in the seventeenth and eighteenth centuries. The reception of the essay in certain quarters indicates how shocking its tone appeared to some of the staid old conservatives of the day. I have a review of it in the *Medical Examiner*, November, 1848, from which I give the following extract:

'This is a curious production, the like of which we have seldom seen from the pen of any one who had passed the age of a sophomore. What makes it the more remarkable is the circumstance that the writer is a gentleman of education and experience, and the author of works which have given him a wide reputation.'

The force of the rebound sufficiently indicates the intensity with which the attack was felt. Bartlett's position, however, reminds one somewhat of the sermon of the liberal Scotch Presbyterian on 'things which cannot be shaken', in which he proceeded at the outset to shake off three-fourths of the cherished beliefs of Evangelical Christianity.

After a preliminary discussion on anatomy and physiology, and on the remarkable rapidity with which these sciences were progressing, he proceeds to speak of

the state of pathology and therapeutics as illustrated in the well-known disease pneumonia. Time will not permit me to do more than to refer to the result of his analysis of the evidence. He classifies the cases into, first, those which terminate naturally and spontaneously, quite independent of any active medical treatment, a proportion 'probably large'; second, a group which will terminate fatally notwithstanding any assistance which art may furnish; they are, as Sir Gilbert Blane said of the worst forms of yellow fever, 'determinedly fatal'; and, finally, a third class, 'not tending necessarily either in one direction or the other,' in which the issue depends upon the treatment of the disease. 'In these cases, art, judiciously applied, saves the life of the patient; the issue of the cases, in death or in recovery, is dependent upon the treatment of the disease.' Then follows a discussion on the nature and limits of the medical art in the various groups of diseases, and he concludes with a section on the triumphs of preventive medicine.

The initials 'A. S.' at the end of a review in the *American Journal of the Medical Sciences*, October, 1848, enables us to estimate the impression which the book made upon a kindred spirit. Professor Alfred Stillé, of the University of Pennsylvania (still with us, I am happy to say), wrote, 'He has done a good work, a work for which he deserves the respect and gratitude of the medical profession, and of all sound-hearted men, whatever their pursuits, who fight under the banner of truth, and are the sworn foes of all imposture, the determined opponents of all error.'

At times, and in degrees differing with our temperaments, there come upon us bouts of depression, when we feel that the battle has been lost, and that

to fight longer is not worth the effort, periods when, amid the weariness, the fever and the fret of daily practice, things have gone against us; we have been misunderstood by patients, our motives have been wrongly interpreted, and smitten perhaps in the house of our friends, the worries of heart to which we doctors are so subject make us feel bitterly the uncertainties of medicine as a profession, and at times make us despair of its future. In a voice that one may trust Bartlett concludes his inquiry with these memorable words, which I quote, in the hope that they may soothe the heartache of any pessimistic brother:

'There is no process which can reckon up the amount of good which the science and art of medicine have conferred upon the human race; there is no moral calculus that can grasp and comprehend the sum of their beneficent operations. Ever since the first dawn of civilization and learning, through "the dark backward, and abysm of time", they have been the true and constant friends of the suffering sons and daughters of men. Through their ministers and disciples, they have cheered the desponding; they have lightened the load of human sorrow; they have dispelled or diminished the gloom of the sick-chamber; they have plucked from the pillow of pain its thorns, and made the hard couch soft with the poppies of delicious rest; they have let in the light of joy upon dark and desolate dwellings; they have rekindled the lamp of hope in the bosom of despair; they have called back the radiance of the lustreless eye and the bloom of the fading cheek; they have sent new vigour through the failing limbs; and, finally, when exhausted in all their other resources, and baffled in their skill—handmaids of philosophy and religion—they have blunted the arrows of death, and rendered less rugged and precipitous the inevitable pathway to the tomb. In the circle of human duties, I do not know of any, short of heroic and perilous daring, or religious martyrdom and self-sacrifice, higher and nobler than those of the physician. His daily round of labour is crowded with beneficence, and his nightly

sleep is broken, that others may have better rest. His whole life is a blessed ministry of consolation and hope.'

The last of Bartlett's strictly medical publications was a little monograph on the *History, Diagnosis, and Treatment of Edematous Laryngitis*, published in Louisville at the time he held the chair of practice at the University, in 1850. It is a carefully prepared monograph, based largely on the studies of Valleix; a fresh interest in the subject had been given him by the observations of Dr. Gurdon Buck, of New York, who had cured several cases by directly scarifying the oedematous membranes.

IV

Naturally studious, fond of poetry, history, biography, and literature in general, and not for long tied and bound in the chains of general practice, Bartlett had ample opportunities to cultivate his mind. He says in one of his letters to Green (dated Pittsfield, Nov. 1, 1835): 'I pass a good deal of my time here quite alone, so that I find myself whiling away the hours in meditation much oftener than when engaged in the more varied and active affairs of business at home. I think that I always leave Pittsfield with the better and purer part of my being somewhat strengthened.' Burton concludes his immortal treatise with the advice: 'Be not solitary, be not idle', but the true student, in some part of his life at least, should know the 'fruitful hours of still increase'. For many years Bartlett enjoyed a leisure known to-day to few professors of medicine, the fruits of which are manifest in his writings. Among his contemporaries in the profession there were brilliant writers—Samuel Henry Dickson, Jacob Bigelow, J. K. Mitchell—but in a style so uniformly high and polished,

yet withal so plain, not one of them approached Bartlett. Compare, for example, Samuel Jackson's *Principles of Medicine*, written in 1832, with the first edition of the *Fevers* (1842)—the one pompous, involved, obscure; the other clear, direct, simple. For style in his medical writings Bartlett may be called the Watson or the Trousseau of America.

Bartlett was at his best in the occasional address, and, as we have noticed already, this talent was cultivated very early in his career, since we find him giving the Fourth of July oration before his fellow citizens when he had been scarcely a year in Lowell. All of the lectures and addresses illustrate, as Holmes said, 'that easy flow of language, that facility of expression, that florid warmth when occasion offers, which commonly marks the prose of those who are born poets.' Among these addresses there are four or five worthy of a permanent place in our literature. Perhaps the most characteristic is one entitled, *The Head and the Heart, or the Relative importance of Intellectual and Moral Education*, which is a stirring plea for a higher tone in social and political morality. In the same clear, ringing accent he speaks in his address on Spurzheim of the dangers of democracy. In a lecture on *The Sense of the Beautiful*, delivered in 1843, Bartlett appears as an apostle of culture, pleading in glowing language for the education of this faculty. One short fragment I must quote:

'Amongst the Hebrews, and in the age of Moses, it was linked to religion; it dwelt amidst the mysteries of Worship and Faith. It brought costly offerings to the costlier altar; it hung the tabernacle with its curtains of fine twined linen, and blue, and purple, and scarlet; and with cherubim of cunning work; it arrayed the high priest of Jehovah in his gorgeous and consecrated gar-

ments, and on the mitre of pure gold upon his forehead, it graved, like the engraving of a signet—Holiness to the Lord. At a later day, and amongst a widely different people, it became the handmaid of a refined and luxurious sensuality. It lapped the soul of Greece in a sensual elysium. Its living impersonations were Pericles and Aspasia. It called the mother of love from the froth of the sea, and bound her zone with its cestus; it filled the hills of Arcady with fleet Oreads; it graced with half-naked Naiads the fountains and the rivers. It crowned the Acropolis with the Parthenon, and it embodied its highest conceptions of physical grace and beauty in the Venus and the Apollo. At other periods during the history of our race, it has manifested itself in other forms than these; under other circumstances, aspects, and influences, and with other results.'

In 1848 he delivered the Fourth of July oration before his old friends in Lowell. At the opening he refers to the fact that twenty years before he had occupied the same position.

'It was the dewy morning of my manhood; "time had not thinned my flowing hair"; life, with its boundless hopes and its golden visions, spread far and fair before me; and cheered by your words of encouragement, and aided by your helping hands—your associate and co-worker, and in your service; a stranger, but welcomed with frank confidence and trust—I had just entered upon its arduous and upward pathway.'

In 1849 appeared a *Brief Sketch of the Life, Character, and Writings of William Charles Wells*, the South Carolinian Tory, who subsequently became a distinguished man of science in London, and who was well known for his researches on the phenomena of dew.

One of the last of Bartlett's publications was *A Discourse on the Times, Character, and Writings of Hippocrates*, delivered as an introductory address before the trustees, faculty, and medical class of the College of

Physicians and Surgeons, at the opening of the session of 1852–3. The three pictures[1] which he gives of Hippocrates, as a young practitioner in the Isle of Thasos, at the death-bed of Pericles, and as a teacher in the Isle of Cos, are masterpieces worthy of Walter Savage Landor. In no words of exaggeration the late George D. Prentice said, 'There are but few word pictures in the English language that exceed the grandeur and loveliness of that one called into being by Dr. Bartlett, in which he imagines Pericles upon his death-bed with Hippocrates in attendance.'

It is remarkable how many physicians write poetry, or what passes as such. I have been told of a period in the history of the Royal College of Physicians of London when every elect (censor), as they were called, had written verses. Some begin young, as did Bartlett; others become attuned in the deep autumnal tone of advancing years, when, as Plato tells us in the *Phaedo*, even Socrates felt a divine impulsion to make verses before quitting the prison house. Those of us who have read the epic of the late distinguished Professor George B. Wood, of the University of Pennsylvania, entitled *First and Last*, published when he was sixty-four, will devoutly hope that professors of medicine, when afflicted with this form of madness, will follow his example and publish their poems anonymously and in another country. Jacob Bigelow, too, when nearly seventy, 'darkened sanctities with song' with his American *Rejected Addresses* (*Eolopoesis*).

Dr. Bartlett had poetical aspirations early in life. In a letter to his sister of Dec. 3, 1826, he speaks of having seen in New York, in the *Garland*, 'two fugitive

[1] The reader will find these pictures in an appendix to this lecture.

pieces which some months before I had made use of to fill up the corner of a newspaper, but what sense they might have contained had been turned into nonsense, and I blushed for my wandering orphans, notwithstanding they had been so well dressed, and though they had found their way into pretty respectable company. I should have blushed for myself had they been exhibited to the public as my offspring.' In another letter of the same period we see how completely he had passed beneath the yoke of Byron.

In December, 1854, Bartlett issued a little volume entitled, *Simple Settings in Verse, for Six Portraits and Pictures from Mr. Dickens's Gallery*, the inditing of which had been, as he says, a pleasant occupation which had helped to while away and fill up many an hour which would otherwise have been weary or vacant in his invalid life. I have already spoken of one, *An Allegory*, in which are autobiographical details. I cannot do better than quote from an appreciative notice which his friend Oliver Wendell Holmes wrote of the little volume.

'When, to the friends he had loved, there came a farewell gift, not a last effort of the learning and wisdom they had been taught to expect from him, but a little book with a few songs in it, songs with his whole warm heart in them, they knew that his hour was come, and their tears fell fast as they read the loving thoughts that he had clothed in words of natural beauty and melody. The cluster of evening primroses had opened and the night was close at hand.'

Of a warm, affectionate nature—a manhood fused with female grace—to judge from the statements of contemporaries and friends, to know Bartlett was to love him. Alonzo Clark writes to him always as 'Dear Brother', and says in one place, 'We all wish that you

were among us—not to work unless you choose, but that we might see that face of yours, and feel the influence of the mind that shines through it.' His confrères, John Orne Green and Alonzo Clark, are invariably addressed as 'Dear Brother'. Among the letters is one of sympathy to Dr. Green, the desire of whose eyes had been taken away at a stroke. In it Bartlett unlocked his heart in a most touching and human appeal to the afflicted soul. It seems almost too sacred to quote, but after listening you will forgive me:

'My dear Brother: What shall I say to the melancholy allusion, in the close of your letter, to the death of our dear Minerva? What poor words of mine can be of any service to one on whom the hand of the Great Chastener has been so heavily laid? How shall I, whose life has been comparatively so cloudless and serene, come, with the message of solace and encouragement, into the presence of one whose meridian sun has been shrouded in such utter and dreadful eclipse? But why should I not? Am I not a brother and a man? Has not bereavement been a guest in the dwelling of my childhood; has not death been a familiar visitor amid the scenes of my early friendships and happiness and hopes? And where, too, is the future—for us all—for me, as well as for yourself? We but follow each other through the furnace of affliction, as we follow each other to the grave. Who of us has so hedged in his earthly treasures that the spoiler cannot easily break through the frail enclosure, and rifle him, in a moment, of the choicest and best? The lines of the Christian poet, familiar to me, chiefly, from the lips of a now sainted mother, occur to my memory here:

> The spider's most attenuated thread
> Is cord, is cable, to man's tender tie
> On earthly bliss;—it breaks at every breeze.

We are brothers, then, in all the liabilities and contingencies and uncertainties of the future. Let us be brothers and fellow helpers, also, in its hopes and its duties. There can be no entire and hopeless wretchedness for the soul of man, except that which arises from

its self-inflicted degradation. The sweet sister, the affectionate daughter, the beautiful bride, and the young mother, was taken away in the clear, unclouded morning of her life—taken away, but where? And by whom? The flower was transplanted from an earthly garden—a fair and sunny one, it is true, but from an earthly garden—to be set forever, where no worm can feed on its root, where no decay can ever dry up its bloom—in the Paradise of God. By whom? Taken away—by her Father, from a far-off country, where she was only a sojourner or a pilgrim—to her beautiful and eternal home. Take these thoughts into your heart, and they shall lighten up, or drive away, the darkness of the past, and, what is better, they shall again cheer your future with the once familiar forms and faces of Happiness and Hope. How can we know what, even of present good, our indulgent Father may have in store for us? He may have allotted to you many long years, to be filled up first with duty, and, if filled with duty, to be crowned, also, with the cheerful light of social and domestic joy. You may say, perhaps, that this is all very well for me to say, but that I know nothing about it. But I do know something of the mutability of all earthly things. This uncertainty has long been to me a daily theme of meditation; so I am not wholly a stranger. But I have found an antidote to the gloom and sadness which would otherwise occasion in remembering that all things are in the hands of a Wise Disposer, and the surest way to please Him, as well as to secure our own present as well as future peace, is to submit to His dispensations and to follow on in the course of active and cheerful duty to Him, to our fellows, and to ourselves.'

When at Louisville some obscure nervous trouble, the nature of which I have not been able to ascertain, attacked Dr. Bartlett. Against it in New York he fought bravely but in vain, and after the session of 1853-4 retired to Smithfield, his native place. The prolonged illness terminated in paralysis, but, fortunately, did not impair his mental faculties in the slightest degree. He died on July 19, 1855.

From the many eulogies which appeared after Bartlett's death, I select a portion of one written by his dearest friend, Alonzo Clark, as the preface to the fourth edition of the *Fevers*.

'Sixteen months ago, he closed his brilliant professional career, after years of growing bodily weakness and pain; his mind not dimmed by his physical infirmities, but bright and comprehensive, glowing with the memories of the past, and the visions of the future. He died too soon for the profession he adorned. The clock had hardly marked twelve at noon, on the dial plate of life, when its pendulum strokes grew faint and gradually fainter to the ear; and now, at length, when all is still, the hand that notes the hours points sadly upward, to indicate how much of daytime still remained to reap the harvest of affection and honour, in those fields from which he had already garnered up so many golden sheaves. He died, alas! too soon. The whole profession are his mourners; for conspicuous as he had become by his medical writings and his extended professional labours, his acknowledged worthiness, his innate gentleness and modesty disarmed envy. He left no enemies. His mind and purpose were pure, almost beyond example. His high mental endowments were controlled and directed by a considerate judgement and an earnest, benevolent heart; and as the laws of refraction, wrought out into mathematical formulae, enable the lapidary to construct the facets which open the fountains of the many-coloured diamond, so, for him, cultivation and elegant taste had brought out the varied and winning native lights of his rich, intellectual, moral, and social nature.'

In translating the *Lives of Eminent French Physicians*, Bartlett said he had a twofold object: 'First, the delineation of distinguished professional character and attainment, and, secondly, by the influence of such high examples to awaken in the younger members of the medical body a more devoted and worthy emulation of the great masters of our art.' In this spirit I appear

before you to-day, glad to tell over the story of your countryman—the story of 'a life in civic action warm', one that all 'the muses deck't with gifts of grace', a distinguished teacher, an author of widespread influence and distinction, a serene philosopher, but above all a man in whom you may recognize, even from the brief and imperfect sketch which I have given,

A likeness to the wise below,
A kinship with the great of old.

APPENDIX

A SKETCH OF HIPPOCRATES[1]

In one of the years of the eighty-eighth Olympiad, in the island of Thasos, fronting the Thracian city of Abdera, there was sadness in the house of Silenus, for its young master had been seized with sudden and alarming illness—the fiery *causus* of the climate. The year had been marked by some meteorological and epidemic peculiarities. A little before the rising of Arcturus—that is, just previous to the autumnal equinox, and while this constellation was still upon the horizon—there had been heavy and frequent rains, with winds from the north. Towards the equinox, and up to the setting of the Pleiades, there were light rains with southerly winds. During the winter, the winds were cold, strong, and dry from the north, with snow. Towards the vernal equinox, there were violent storms. The spring was cold and rather wet, with winds from the north. Towards the summer solstice, there were light rains, and the temperature was cool till near the approach of the dog-days. After the dog-days and until the rising of Arcturus, the summer was marked by great heat; not at intervals, but constantly. There was no water. Summer-

[1] From *A Discourse on the Times, Character, and Writings of Hippocrates*, by Elisha Bartlett.

etesian-winds were prevalent. From the rising of Arcturus to the time of the equinox, there were rains with the wind from the south.

During the winter, the general health of the Thasians was good, excepting an epidemic prevalence of paralysis. At the opening of spring, the *causus* showed itself, and continued to prevail up to the autumnal equinox. During the early part of the season, the disease was mild; but after the autumn rains, it became more severe, and carried off a great many of its subjects. . . . Dysenteries prevailed also during the summer; and some patients with fever even, who had had hemorrhages, were attacked with dysentery: this happened to the slave of Eraton, and to Myllus. . . . There was much sickness amongst the women. . . . Many had difficult labors, and were sick subsequently; this was the case with the daughter of Telebolus, who died on the tenth day after her confinement. . . . When the *causus* proved fatal, death commonly took place on the sixth day, as in the cases of Epaminondas, Silenus, and Philiscus, son of Antagonas. . . . The parotid glands suppurated in the case of Cratistonax, who lived near the temple of Hercules; and also in that of the servant of Scymmus, the fuller.

But omitting any further details of the prevailing diseases of the year, let us return to the bedside of the young patient in Abdera. It is the third day of his disease; he has had a restless and distressed night, with some wandering of the mind; the symptoms are all worse in the morning, and his family and neighbors are anxious and alarmed. The occupations and order of that old Thasian household are interrupted and broken up. A fresh offering has been placed on the altar of the household Jove, standing in the centre of the inner court. The sound of the flute and the cithara has ceased; there is no animated talk of the last winners at the Isthmian or the Olympian games; the clatter of the loom and the domestic hum of the spinning wheel are no longer heard; the naked feet of the slaves and the women fall carefully and silently upon the uncarpeted floors, and an unwonted stillness reigns throughout the numerous apartments of the dwelling. There is no savory steam of roasting wild boar from the

kitchen, and the fragrant Thracian wine stands untasted on the table, with a few plain barley-cakes and a little salt fish.

Silenus lies in his sleeping-chamber, in the quiet interior part of the house, adjoining the apartments of the women, farthest from the vestibule, and near to the garden. By the bed of the sick man, there is a small tripod stand, with a circular top, and upon it there is a statuette of Hercules, a bowl of warm barley-water, and a cup of oxymel.

Leaning her head on the foot of the bed and sobbing, sits, on a low stool, a young Greek woman, beautiful in her features, and graceful in the flowing outlines of her person, as the Thessalian maidens of Homer. There is a picturesque combination of barbarian rudeness and Grecian elegance in her appearance, not an unfitting type and expression of the age and state of society, in the midst of which she lived. Her feet and ankles are bare; she wears only a single garment—the long Ionic chiton of linen—with large sleeves reaching only a little below the shoulders, leaving uncovered, in their snowy whiteness, arms that might have rivalled those of the jealous queen of Olympus. A girdle fastens the robe loosely round a waist, like that of the Medicean Venus, innocent of the deformities of buckram and whalebone. The light auburn hair is simply parted and carried back from the forehead, gathered in a knot on the crown of the head, fastened with a golden grasshopper, and held by a coif of golden network.

At the head of the bed, watching steadfastly and earnestly the appearance of the patient, is seated his physician, the already celebrated son of Heraclides and Phenarete, Hippocrates of Cos. He has just entered the apartment, to make his morning visit. His sandals have been taken off, and his feet washed by a slave in the vestibule. He wears over his linen tunic a large flowing mantle of light fine woolen, suited to the season, not unlike the later toga of the Romans, fastened at the neck with a cameo of Æsculapius, and falling in graceful folds nearly to his feet. His hair is long, and both this and his beard are kept and arranged with scrupulous neatness and care. He is thirty years old, in the very prime and beauty of early manhood. His features, through these

misty shadows of many centuries, we cannot clearly distinguish, but we see that his face is dignified, thoughtful, and serene; and his whole aspect, manner, and expression are those of high, antique breeding, of refined culture, and of rather studied and elaborate elegance.

His examination of his patient was long, anxious, and careful. He saw at once that the gravity and danger of the disease had increased since his last visit. He inquired very minutely into the manner in which the night had been passed; and was told by the watchers that the patient had had no sleep, that he had talked constantly, had sung and laughed, and had been agitated and restless. He found the hypochondria tumefied, but without much hardness. The stools had been blackish and watery, and the urine turbid and dark colored. He noticed the temperature and feel of the skin, and he studied for a long time and with great solicitude the general manner and appearance, the decubitus, the breathing, the motions, and especially the physiognomy of the patient. The only circumstance in the examination that would have particularly attracted the attention of a modern witness of the scene, would have been his omission to feel the pulse. With this exception, no examination of the rational symptoms of disease could have been more thorough and methodical.

Having satisfied himself as to the state of his patient, he retired to an adjoining room, followed by some of the attendants, to give directions in regard to the few simple remedies that he intended to use. The patient had already been bled, and had had a purgative of black hellebore. Hippocrates directed, that instead of the strained decoction of barley, which had been the patient's drink, he should now have honey and water—the favorite hydromel—that the bed should be made softer—the windows of the room still farther darkened, and that a warm flax-seed poultice, softened with olive oil, should be applied to the abdomen.

With a sad but decided expression of his fears as to the issue of the case, and a few kindly and pious words to the weeping wife, about the dignity, the solace, and the duty, in all our trials, of submission to the will of the gods, he gathered his mantle gracefully about him, had his sandals refitted by the

slave who waited in the vestibule, and proceeded on his daily round of visits among the houses of the city.

. . . . . .

And now, leaving the sterile island of Thasos, let us follow the young physician to another sick chamber—to a scene of domestic life, still further illustrative of that remote and wonderful period, with which we are concerned.

The time is a year or two later—it is the house of Pericles that we enter, and we stand by the death-bed of the great and venerable Archon. Everything in the spacious apartment indicates the pervading presence—not of obtrusive grandeur, or of showy and ostentatious wealth—but of stately elegance, and of high, various, many-sided luxury, culture, and refinement. Philosophy, letters, and art breathe in the quiet atmosphere of the room; and the taste of Aspasia sheds an Asiatic grace over its furnishing and its decorations. In one corner stands a statue of Minerva, from the chisel of Phidias; and the walls are covered with pictures, fresh from the pencils of Panænus and Polygnotus, illustrating the legendary and historic glories of Greece. There might have been seen Thêseus, bearing off from the field of victory, on the banks of the Thermodon, the masculine and magnificent queen of the Amazons—half willing, perhaps, to be the captive of such a victor; Jason, in his good ship Argo, with his fifty selectest heroes, convoyed by the queen of love, the awful Hêre, and Apollo, winds his various and adventurous voyage, crowded with poetic imagery and romantic incident, and brings back the golden fleece from Colchis;—Helen, at her loom, is weaving into her 'golden web' the story of the Trojan wars;—the chaste Penelope, by the light of her midnight lamp, undoes the delusive labors of the day;—Ulysses, returned from his long wanderings, surveys once more, with boyish pride and delight, the dear old bow, which no arm but his could bend.

The central figure on that old historic canvas that I have endeavored to unroll before you, is that of the dying statesman. Raised and resting, in solemn and august serenity, upon its last pillow, lies that head of Olympian grandeur,

which—I may say it without presumption—after the lapse of nearly twenty-three centuries, now finds, for the first time, its fitting representative and likeness—as the character and career of the great Athenian find their counterparts also—in that illustrious orator and statesman, who now walks in solitary majesty amongst us—the pride, the strength, the glory, of the Republic—the Pericles of our Athens—whose Acropolis is the Constitution of his country—whose Propylæa are the freedom and the federation of the States.

Added to the calamities of that long and disastrous internecine struggle between the two rival cities of Greece, which had just begun, Athens was now afflicted with that terrible visitation of the plague, the history of which has been left to us by Thucydides; and Pericles was sinking under a protracted and wearing fever—the result of an attack of the disease.

His long and glorious life is about to close. He had been, for more than an entire generation—if never the first Archon, and not always the most popular—by common consent the most eminent citizen, statesman, and orator of the republic—the great defender of her constitution—the champion of her freedom and her rights—the upholder and the magnifier of her renown. Political rivals, disappointed partisans, and a few malignant personal enemies, and professional libellers and satirists, had been hostile to his career, and had endeavored to blacken his fair fame; but his strong and unshaken democratic faith—his far-seeing sagacity—his firmness and moderation—his enlarged, liberal, humanizing, conservative, and pacific policy—his moral courage and independence, and his high public probity, had triumphed over them all; and although by braving the prejudices of his friends and supporters, in his devotion to the general weal, he had gathered over his declining sun some clouds of public disfavor—the sense of justice, and the feeling of gratitude in the minds of his countrymen were quick to return—the clouds were already scattered, or they served only to deepen and reflect the setting splendor which, for a moment, they had intercepted and obscured.

Many of his near personal friends and relatives had already

fallen victims to the pestilence. Both his sons had perished, and the young Pericles—the child of Aspasia—had been sent away, with his mother, for safety, into Thessaly. Phidias, and his old teacher, Anaxagoras, his 'Guide, philosopher, and friend', had died a little while before the breaking out of the epidemic. Those who were left had now gathered around the bed of the dying Archon, to receive the rich legacy of his parting words, and to pay to him the last solemn and kindly offices of life.

Not often in the world's history has there met together a more august and illustrious company. These are a few of those whom we are able to recognize amongst them. Resting his head on the shoulder of Socrates, and sobbing aloud in unrestrained and passionate sorrow, leans the wild and reckless Alcibiades—just in the first bloom of that resplendent personal beauty which made him seem to the eyes, even of the Greeks, more like the radiant apparition of a young Apollo, than any form of mere earthly mould—subdued, for the first time in his life, and probably for the last—by the spectacle before him, of his dying relative and guardian—to reverence, tenderness, and truth. Sophocles, his old companion in arms, is there; and near him, in his coarse mantle, and with unsandaled feet, may have stood a grandson of Aristides, still poor with the honorable poverty of his great ancestor.

Conspicuous amidst this group of generals, admirals, statesmen, orators, artists, poets, and philosophers,—in rank and fortune, in social position, in reputation, in learning, culture, and refinement, their equal and associate, sits the young physician of Cos. Already had his rising fame reached Athens, and when the city, overcrowded with the inhabitants of Attica, driven from their homes by the armies of Sparta, was smitten with the pestilence, he was summoned from his island home in the Ægean, to stay, if he could, the march of the destroying angel, and to succor with his skill those who had fallen under the shadow of its wings.

. . . . . .

On a gentle declivity, looking toward the south-west, in the small island of Cos, lying in the Ægean sea, a few stadia

from the coast of Asia Minor, stands the temple of Æsculapius. Its Ionic columns, and its ornamented friezes of Pentelican marble, glitter and flash in the sunlight, as we watch them through the swaying branches of the ancient oaks, chestnuts, and elms, that make the sacred grove of the temple. In the centre of the principal room, or cella, of the temple, and fronting the entrance, stand statues of Æsculapius, and his daughters, Hygiea and Panacea. On each side of the entrance are marble fonts of lustral water, for the preliminary purification of the sick visitors to the temple.

Near a column of the temple, and holding a roll of papyrus in his left hand, stands Hippocrates. Gathered about him, in picturesque little groups, there is a company of Greek youths. Their tasteful and elegant costumes, their earnest and intelligent faces, and their general air and bearing, all show plainly enough the superior refinement and culture of the class to which they belong. They are medical students, young Asclepiades, who have assembled here from the several states of Greece, to acquire the clinical skill and experience of the great surgeon and physician of Cos, and to listen to the eloquent lessons of the illustrious professor.

Thirty years have gone by since we met him at the bedside of the dying Pericles. The lapse of this generation has thinned his flowing hair, and sprinkled his beard with silver.

It would be gratifying if we could know something of his personal history during this long and active period of his life. We know but little, however, and this little is dim and shadowy. That he had led a life of activity and usefulness, and of growing reputation, and that he had visited various portions of Greece, is certain. What he himself had witnessed, and must have felt, we know well enough. He had seen, for this whole period, his country torn and distracted by civil war—state arrayed against state, city against city; he had mourned over the disastrous expedition of Athens against Syracuse; and shooting athwart all the murky darkness of this troubled and stormy period—instead of the benignant sun of Pericles—the baleful rays of the star of Alcibiades, setting at last, but too late for his country, in ignominy and blood.

I have not departed from the strictest limits of historical probability, in assigning to Hippocrates the high powers of didactic and persuasive oratory. One of the most potent agencies in the development of Greek intellect, and the advancement of Greek civilization, consisted in the general prevalence of public teaching and recitation. For many successive centuries, it was from the living lips of bards and rhapsodists, kindled with coals from the glowing altars of patriotism and religion,—and not through the medium of any cold and silent written records, that the immortal strains of the Iliad and the Odyssey rang through the land, and were made literally familiar as household words. Even up to an advanced period of Grecian culture, the art of writing was but little practised; and it was by speech, and not by reading, that statesmen, poets, orators, philosophers, and historians acted upon their disciples and the public. Then, the evidence derived from his writings is full and conclusive, that Hippocrates was not merely a skilful physician, but that he was learned in all the philosophy and literature of his age. Plato speaks of the Asclepiades, his cotemporaries, as men of elegant and cultivated minds, who, in the explanations they give to their patients, go even to the heights of philosophy. It is no violation, then, of historic probability, to presume that the great philosophic and practical physician—who had been trained in this unrivalled school of human speech—who had listened to the eloquence of Pericles in the public assemblies, or been charmed by the 'colloquial magic of Socrates', in the market-place, should have been himself, also, a master of this high power of instructive and persuasive speech. It is by no forced or illegitimate exercise of the fancy, that we look back to the scene I have endeavored to sketch. And with little danger of departing far from the truth, we may imagine what would be likely to constitute the theme of his discourse, especially if the occasion was one of unusual interest or solemnity, such as the opening or closing of one of his courses of instruction—the Introductory Lecture—or the Valedictory Address to the graduating class of the school of Cos, at the term of the first year of the ninety-fifth Olympiad.

The character of Hippocrates, his position, his close observation of nature, his knowledge, his philosophy, the times in which he lived, the circumstances which surrounded him, all conspired to make him a polemic and a reformer. He would probably take such an occasion as that of which I am speaking, to lay down and to vindicate the great principles of his system; and he would be likely to begin with an exposition of the errors of medical doctrine and practice, most important and most generally prevalent. I do not suppose that our illustrious historical father was wholly exempt from the infirmities of our common nature; and it is very possible that in his animadversions upon the system of his Cnidian neighbors, there were mingled some ingredients more spicy than Attic salt; and he may have indulged, perhaps, in some allowable self-congratulation, that the class of Cos was so much larger than that at Cnidus.

I suppose, however, that as President of the college, he would, in a graceful and dignified exordium, give his greeting and welcome to the members of the class; he would express his gratification at seeing so numerous an assemblage from so many of the states of Greece—from the North and the South, the East and the West—from Attica, and Bœotia, and the Peloponnesus—from distant Sicily, and even from Egypt.

After this, or some similar appropriate introduction, he would probably continue by warning his hearers against the subtle and dangerous errors of superstition—of the old theurgic faith. He would speak of the great revolution that had so recently taken place in the Greek mind, even then only partially accomplished; he would describe in colors such as only he could use, who had felt this change in his own spirit, and who had witnessed it all about him—the gradual dawn and the final rising of the central, solar idea of a simple spiritual theism, of fixed laws, of invariable relations and sequences of events, in the economy of nature. As he sketched the outlines of this great and pregnant history, he could hardly fail to linger for a moment, with something of the passionate enthusiasm of his early years, and with something also of their strong and simple faith, upon that gorgeous theurgic and mythological creation of the Greek mind, which

marked its legendary and religious period. He would speak of this mythology, and its various and beautiful legends, in no cynical or bigoted tone, but with philosophical toleration, and with something even of loving sympathy and admiration. He would say it was the genial and natural product of the quick, susceptible, many-sided Greek mind, in the period of its childhood and adolescence. Kindling with his old enthusiasm, he would have likened that early age, peopled with its gods and demi-gods, its beautiful women and heroic men, to its own young Apollo—the bloom of immortal youth on his beaming forehead, his flowing locks sweet with the ambrosia of the dewy morning of life, and all his form radiant with a divine beauty. He would have said that the present high civilization of his country was in a great degree the growth of seed planted in that genial soil, and nurtured by that genial sun; that Greek character, and art, and philosophy, are all still steeped in the glorious light of the old Homeric age.

In the third place, he would have warned his hearers against the seductive but dangerous influences of the philosophers. These men, he would have said, are, for the most part, idle dreamers, and they are nothing else. I know them well. They affect superior wisdom, and they look down disdainfully upon the physician, and the patient observer of nature. They seem to think that the economy of the universe, including the human system, in health and disease, can be ascertained and understood by a sort of intellectual divination, which they call wisdom and philosophy, but which is in reality only empty hypothesis and idle speculation. He would then have entered into an examination of these systems; he would have exhibited their radical errors and defects—he would have compared them with the humbler philosophy of observation and experience, and he would have shown that they had accomplished nothing, and that in the very nature of things they could accomplish nothing, for the advancement of real knowledge.

As he gazed upon that most impressive spectacle before him,—so many of his young countrymen, gathered at the peaceful summons of science and humanity from all portions

of the Grecian territory, filled with hope, with ardor, with promise, life's full and radiant future stretching far and fair before them,—a cloud of sadness could hardly fail to throw its shadow over his features, as he remembered the long thirty years of civil discord, of deadly internecine strife, through which his country had just passed; and his closing words could hardly fail to rise into a patriotic and Pan-Hellenic hymn, the burden of which should be, that the glory, and happiness, and safety of Greece, were to be found in the union of her states; that they whom he addressed—his young friends and disciples—were the common and equal heirs of the glory of Marathon and Thermopylæ; that they all spoke the language of Homer; that while they need not forget, but might be proud even, that they were Spartans, or Athenians, or Thebans, or Thessalians, they ought to remember with a higher pride, that they were also, and more than all, Greeks; that they had a common country, and that a common destiny awaited them.

A BACKWOOD PHYSIOLOGIST[1]

Come with me for a few moments on a lovely June day in 1822, to what were then far-off northern wilds, to the Island of Michilimacinac, where the waters of Lake Michigan and Lake Huron unite and where stands Fort Mackinac, rich in the memories of Indian and voyageur, one of the four important posts on the upper lakes in the days when the rose and the fleur-de-lis strove for the mastery of the western world. Here the noble Marquette laboured for his Lord, and here beneath the chapel of St. Ignace they laid his bones to rest. Here the intrepid La Salle, the brave Tonty and the resolute Du Luht had halted in their wild wanderings. Its palisades and block-houses had echoed the war-whoops of Ojibwas and Ottawas, of Hurons and Iroquois, and the old fort had been the scene of bloody massacres and hard-fought fights; but at the conclusion of the War of 1812, after two centuries of struggle, peace settled at last on the island. The fort was occupied by United States troops, who kept the Indians in check and did general police duty on the frontier, and the place had become a rendezvous for Indians and voyageurs in the employ of the American Fur Company. On this bright spring morning the village presented an animated scene. The annual return tide to the trading post was in full course, and the beach was thronged with

[1] An Address before the St. Louis Medical Society, October 4, 1902.

canoes and batteaux laden with the pelts of the winter's hunt. Voyageurs and Indians, men, women, and children, with here and there a few soldiers, made up a motley crowd. Suddenly from the company's store there is a loud report of a gun, and amid the confusion and excitement the rumour spreads of an accident, and there is a hurrying of messengers to the barracks for a doctor. In a few minutes (Beaumont says twenty-five or thirty, an eyewitness says three) an alert-looking man in the uniform of a U. S. Army surgeon made his way through the crowd, and was at the side of a young French Canadian who had been wounded by the discharge of a gun, and with a composure bred of an exceptional experience of such injuries, prepared to make the examination. Though youthful in appearance, Surgeon Beaumont had seen much service, and at the capture of York and at the investment of Plattsburgh he had shown a coolness and bravery under fire which had won high praise from his superior officers. The man and the opportunity had met—the outcome is my story of this evening.

I. The Opportunity—Alexis St. Martin

On the morning of June 6 a young French Canadian, Alexis St. Martin, was standing in the company's store, 'where one of the party was holding a shotgun (not a musket), which was accidentally discharged, the whole charge entering St. Martin's body. The muzzle was not over three feet from him—I think not more than two. The wadding entered, as well as pieces of his clothing; his shirt took fire; he fell, as we supposed, dead.'

'Doctor Beaumont, the surgeon of the fort, was immediately sent for, and reached the wounded man in

a very short time, probably three minutes. We had just gotten him on a cot, and were taking off some of his clothing. After the doctor had extracted part of the shot, together with pieces of clothing, and dressed his wound carefully, Robert Stuart and others assisting, he left him, remarking, "The man cannot live thirty-six hours; I will come and see him by and by." In two or three hours he visited him again, expressing surprise at finding him doing better than he had anticipated. The next day, after getting out more shot and clothing, and cutting off ragged edges of the wound, he informed Mr. Stuart, in my presence, that he thought he would recover."'[1]

The description of the wound has been so often quoted as reported in Beaumont's work, that I give here the interesting summary which I find in a 'Memorial' presented to the Senate and House of Representatives by Beaumont:

'The wound was received just under the left breast, and supposed, at the time, to have been mortal. A large portion of the side was blown off, the ribs fractured, and openings made into the cavities of the chest and abdomen, through which protruded portions of the lungs and stomach, much lacerated and burnt, exhibiting altogether an appalling and hopeless case. The diaphragm was lacerated, and a perforation made directly into the cavity of the stomach, through which food was escaping at the time your memorialist was called to his relief. His life was at first wholly despaired of, but he very unexpectedly survived the immediate effects of the wound, and necessarily continued a long time under the constant professional care and treatment of your

[1] Statement of G. G. Hubbard, an officer of the company, who was present when St. Martin was shot, quoted by Dr. J. R. Baily, of Mackinac Island, in his address on the occasion of the Beaumont Memorial Exercises, Mackinac Island, July 10, 1900. *The Physician and Surgeon*, December, 1900.

memorialist, and, by the blessing of God, finally recovered his health and strength.

'At the end of about ten months the wound was partially healed, but he was still an object altogether miserable and helpless. In this situation he was declared "a common pauper" by the civil authorities of the county, and it was resolved by them that they were not able, nor required, to provide for or support, and finally declined taking care of him, and, in pursuance of what they probably believed to be their public duty, authorized by the laws of the territory, were about to transport him, in this condition, to the place of his nativity in lower Canada, a distance of more than fifteen hundred miles.

'Believing the life of St. Martin must inevitably be sacrificed if such attempt to remove him should be carried into execution at that time, your memorialist, after earnest, repeated, but unavailing, remonstrances against such a course of proceedings, resolved, as the only way to rescue St. Martin from impending misery and death, to arrest the process of transportation and prevent the consequent suffering, by taking him into his own private family, where all the care and attention were bestowed that his condition required.

'St. Martin was, at this time, as before intimated, altogether helpless and suffering under the debilitating effects of his wounds—naked and destitute of everything. In this situation your memorialist received, kept, nursed, medically and surgically treated and sustained him, at much inconvenience and expense, for nearly two years, dressing his wounds daily, and for considerable part of the time twice a day, nursed him, fed him, clothed him, lodged him and furnished him with such necessaries and comforts as his condition and suffering required.

'At the end of these two years he had become able to walk and help himself a little, though unable to provide for his own necessities. In this situation your memorialist retained St. Martin in his family for the special purpose of making physiological experiments.'

In the month of May, 1825, Beaumont began the experiments. In June he was ordered to Fort Niagara,

where, taking the man with him, he continued the experiments until August. He then took him to Burlington and to Plattsburgh. From the latter place St. Martin returned to Canada, without obtaining Dr. Beaumont's consent. He remained in Canada four years, worked as a voyageur, married and had two children. In 1829 Beaumont succeeded in getting track of St. Martin, and the American Fur Company engaged him and transported him to Fort Crawford on the upper Mississippi. The side and wound were in the same condition as in 1825. Experiments were continued uninterruptedly until March, 1831, when circumstances made it expedient that he should return with his family to lower Canada. The 'circumstances', as we gather from letters, were the discontent and homesickness of his wife. As illustrating the mode of travel, Beaumont states that St. Martin took his family in an open canoe 'via the Mississippi, passing by St. Louis, ascended the Ohio river, then crossed the state of Ohio to the lakes, and descended the Erie and Ontario and the river St. Lawrence to Montreal, where they arrived in June'. Dr. Beaumont often lays stress on the physical vigour of St. Martin as showing how completely he had recovered from the wound. In November, 1832, he again engaged himself to submit to another series of experiments in Plattsburgh and Washington. The last recorded experiment is in November, 1833.

Among the Beaumont papers, for an examination of which I am much indebted to his daughter, Mrs. Keim (Appendix A), there is a large mass of correspondence relating to St. Martin, extending from 1827, two years after he had left the doctor's employ, to October, 1852. Alexis was in Dr. Beaumont's employ in the periods already specified. In 1833 he was enrolled in the

United States Army at Washington as Sergeant Alexis St. Martin, of a detachment of orderlies stationed at the War Department. He was then twenty-eight years of age, and was five feet five inches in height.

Among the papers there are two articles of agreement, both signed by the contracting parties, one dated Oct. 19, 1833, and the other November 7 of the same year. In the former he bound himself for a term of one year to

'Serve, abide and continue with the said William Beaumont, wherever he shall go or travel or reside in any part of the world his covenant servant and diligently and faithfully, etc., . . . that he, the said Alexis, will at all times during said term when thereto directed or required by said William, submit to assist and promote by all means in his power such philosophical or medical experiments as the said William shall direct or cause to be made on or in the stomach of him, the said Alexis, either through and by means of the aperture or opening thereto in the side of him, the said Alexis, or otherwise, and will obey, suffer and comply with all reasonable and proper orders of or experiments of the said William in relation thereto and in relation to the exhibiting and showing of his said stomach and the powers and properties thereto and of the appurtenances and the powers, properties, and situation and state of the contents thereof.'

The agreement was that he should be paid his board and lodging and $150 for the year. In the other agreement it is for two years, and the remuneration $400. He was paid a certain amount of the money down.

There are some letters from Alexis himself, all written for him and signed with his mark. In June, 1834, he writes hat his wife was not willing to let him go, and thinks than he can do a great deal better to stay at home. From this time on Alexis was never again in Dr. Beaumont's employ.

There is a most interesting and protracted correspon-

dence in the years 1836, 1837, 1838, 1839, 1840, 1842, 1846, 1851 and 1852, all relating to attempts to induce Alexis to come to St. Louis. For the greater part of this time he was in Berthier, in the district of Montreal, and the correspondence was chiefly conducted with a Mr. William Morrison, who had been in the north-west fur trade, and who took the greatest interest in Alexis, and tried to induce him to go to St. Louis. (See Appendix B.)

In 1846 Beaumont sent his son Israel for Alexis, and in a letter dated August 9, 1846, his son writes from Troy: 'I have just returned from Montreal, but without Alexis. Upon arriving at Berthier I found that he owned and lived on a farm about fifteen miles south-west of the village.' Nothing would induce him to go.

The correspondence with Mr. Morrison in 1851 and 1852 is most voluminous, and Dr. Beaumont offered Alexis $500 for the year, with comfortable support for his family. He agreed at one time to go, but it was too late in the winter and he could not get away.

The last letter of the series is dated Oct. 15, 1852, and is from Dr. Beaumont to Alexis, whom he addresses as *Mon Ami*. Two sentences in this are worth quoting:

'Without reference to past efforts and disappointments—or expectation of ever obtaining your services again for the purpose of experiments, etc., upon the proposals and conditions heretofore made and suggested, I now proffer to you in faith and sincerity, new, and I hope satisfactory, terms and conditions to ensure your prompt and faithful compliance with my most fervent desire to have you again with me—not only for my own individual gratification, and the benefits of medical science, but also for your own and family's present good and future welfare.' He concludes with, 'I can say no more, Alexis—you know what I *have* done for you many years since—what I have been *trying*, and am still anxious and wishing to do with and for you—what

efforts, anxieties, anticipations, and disappointments I have suffered from your non-fulfilment of my expectations. Don't disappoint me more nor forfeit the bounties and blessings reserved for you.'

So much interest was excited by the report of the experiments that it was suggested to Beaumont that he should take Alexis to Europe and submit him there to a more extended series of observations by skilled physiologists. Writing June 10, 1833, he says: 'I shall engage him for five or six years if he will agree, of which I expect there is no doubt. He has always been pleased with the idea of going to France. I feel much gratified at the expression of Mr. Livingston's desire that we should visit Paris, and shall duly consider the interest he takes in the subject and make the best arrangements I can to meet his views and yours.' Mr. Livingston, the American minister, wrote from Paris, March 18, 1834, saying that he had submitted the work to Orfila and the Academy of Sciences, which had appointed a committee to determine if additional experiments were necessary, and whether it was advisable to send to America for Alexis. Nothing, I believe, ever came of this, nor, so far as I can find, did Alexis visit Paris. Other attempts were made to secure him for purposes of study. In 1840 a student of Dr. Beaumont's, George Johnson, then at the University of Pennsylvania, wrote saying that Dr. Jackson had told him of efforts made to get Alexis to London, and Dr. Gibson informed him that the Medical Society of London had raised £300 or £400 to induce St. Martin to come, and that he, Dr. Gibson, had been trying to find St. Martin for his London friends. There are letters in the same year from Dr. R. D. Thomson, of London, to Professor Silliman, urging him to arrange

that Dr. Beaumont and Alexis should visit London. In 1856 St. Martin was under the observation of Dr. Francis Gurney Smith, in Philadelphia, who reported a brief series of experiments, so far as I know the only other report made on him.[1]

St. Martin had to stand a good deal of chaffing about the hole in his side. His comrades called him 'the man with a lid on his stomach'. In his memorial address, Mr. C. S. Osborn, of Sault Ste. Marie, states that Miss Catherwood tells a story of Étienne St. Martin fighting with Charlie Charette because Charlie ridiculed his brother. Étienne stabbed him severely, and swore that he would kill the whole brigade if they did not stop deriding his brother's stomach.

At one time St. Martin travelled about exhibiting the wound to physicians, medical students, and before medical societies. In a copy of Beaumont's work, formerly belonging to Austin Flint, Jr., and now in the possession of a physician of St. Louis, there is a photograph of Alexis sent to Dr. Flint. There are statements made that he went to Europe, but of such a visit I can find no record.

My interest in St. Martin was of quite the general character of a teacher of physiology, who every session referred to his remarkable wound and showed Beaumont's book with the illustration. In the spring of 1880, while still a resident of Montreal, I saw a notice in the newspapers of his death at St. Thomas. I immediately wrote to a physician and to the parish priest, urging them to secure me the privilege of an autopsy, and offering to pay a fair sum for the stomach, which I agreed to place in the Army Medical Museum in

[1] *Medical Examiner*, 1856, and *Experiments on Digestion*, Philadelphia, 1856.

Washington, but without avail. Subsequently, through the kindness of the Hon. Mr. Justice Baby, I obtained the following details of St. Martin's later life. Judge Baby writes to his friend, Prof. D. C. MacCallum of Montreal, as follows:

'I have much pleasure to-day in placing in your hands such information about St. Martin as Revd. Mr. Chicoine, Curé of St. Thomas, has just handed over to me. Alexis Bidigan, *dit* St. Martin, died at St. Thomas de Joliette on the 24th of June, 1880, and was buried in the cemetery of the parish on the 28th of the same month. The last sacraments of the Catholic church were ministered to him by the Revd. Curé Chicoine, who also attended at his burial service. The body was then in such an advanced stage of decomposition that it could not be admitted into the church, but had to be left outside during the funeral service. The family resisted all requests—most pressing as they were—on the part of the members of the medical profession for an autopsy, and also kept the body at home much longer than usual and during a hot spell of weather, so as to allow decomposition to set in and baffle, as they thought, the doctors of the surrounding country and others. They had also the grave dug eight feet below the surface of the ground in order to prevent any attempt at a resurrection. When he died St. Martin was 83 years of age, and left a widow, whose maiden name was Marie Joly. She survived him by nearly seven years, dying at St. Thomas on the 20th of April, 1887, at the very old age of 90 years. They left four children, still alive—Alexis, Charles, Henriette, and Marie.

'Now I may add the following details for myself. When I came to know St. Martin it must have been a few years before his death. A lawsuit brought him to my office here in Joliette. I was seized with his interests; he came to my office a good many times, during which visits he spoke to me at great length of his former life, how his wound had been caused, his peregrinations through Europe and the United States, etc. He showed me his wound. He complained

bitterly of some doctors who had awfully misused him, and had kind words for others. He had made considerable money during his tours, but had expended and thrown it all away in a frolicsome way, especially in the old country. When I came across him he was rather poor, living on a small, scanty farm in St. Thomas, and very much addicted to drink, almost a drunkard one might say. He was a tall, lean man, with a very dark complexion, and appeared to me then of a morose disposition.'

II. The Book

In the four periods in which Alexis had been under the care and study of Beaumont a large series of observations had been recorded, amounting in all to 238. A preliminary account of the case, and of the first group of observations, appeared in the *Philadelphia Medical Recorder* in January, 1825. During the stay in Washington in 1832 the great importance of the observations had become impressed on the Surgeon-General, Dr. Lovell, who seems to have acted in a most generous and kindly spirit. Beaumont tried to induce him to undertake the arrangement of the observations, but Lovell insisted that he should do the work himself. In the spring of 1833 Alexis was taken to New York, and there shown to the prominent members of the profession, and careful drawings and coloured sketches were made of the wound by Mr. King. A prospectus of the work was issued and was distributed by the Surgeon-General, who speaks in a letter of sending them to Dr. Franklin Bache and to Dr. Stewart of Philadelphia, and in a letter from Dr. Bache to Dr. Beaumont, acknowledging the receipt of a bottle of gastric juice, Bache states that he has placed the prospectus in Mr. Judah Dobson's store and has asked for sub-

scribers. Beaumont did not find New York a very congenial place. He complained of the difficulty of doing the work, owing to the vexatious social intercourse. He applied for permission to go to Plattsburgh, in order to complete the book. After having made inquiries in New York and Philadelphia about terms of publication, he decided, as the work had to be issued at his own expense, that it could be as well and much more cheaply printed at Plattsburgh, where he would also have the advice and help of his cousin, Dr. Samuel Beaumont. In a letter to the Surgeon-General, dated June 10, 1833, he acknowledges the permission to go to Plattsburgh, and says: 'I shall make my arrangements to leave here for Pl. in about a week to *rush* the execution of the Book as fast as possible. I am now having the drawings taken by Mr. King engraved here.'

The summer was occupied in making a fresh series of experiments and getting the work in type. On December 3 he writes to the Surgeon-General that the book will be ready for distribution in a few days, and that 1,000 copies will be printed.

The work is an octavo volume of 280 pages, entitled *Experiments and Observations on the Gastric Juice and the Physiology of Digestion*, by William Beaumont, M.D., Surgeon in the United States Army. Plattsburgh. Printed by F. P. Allen, 1833. While it is well and carefully printed, the paper and type are not of the best, and one cannot but regret that Beaumont did not take the advice of Dr. Franklin Bache, who urged him strongly not to have the work printed at Plattsburgh, but in Philadelphia, where it could be done in very much better style. The dedication of the work to Joseph Lovell, M.D., Surgeon-General of the United States Army, acknowledges in somewhat laudatory

terms the debt which Beaumont felt he owed to his chief, who very gratefully acknowledges the compliment and the kindly feeling, but characterizes the dedication as 'somewhat apocryphal'.

The work is divided into two main portions; first, the preliminary observations on the general physiology of digestion in seven sections: Section I, Of Aliment; Section II, Of Hunger and Thirst; Section III, Of Satisfaction and Satiety; Section IV, Of Mastication, Insalivation, and Deglutition; Section V, Of Digestion by the Gastric Juice; Section VI, Of the Appearance of the Villous Coat, and of the Motions of the Stomach; Section VII, Of Chylification and Uses of the Bile and Pancreatic Juice. The greater part of the book is occupied by the larger section of the detailed account of the four series of experiments and observations. The work concludes with a series of fifty-one inferences from the foregoing experiments and observations.

The subsequent history of the book itself is of interest, and may be dealt with here. In 1834 copies of the Plattsburgh edition, printed by F. P. Allen, were issued by Lilly, Wait & Co., of Boston.

In the Beaumont correspondence there are many letters from a Dr. McCall, in Utica, N.Y., who was an intimate friend of a Mr. Wm. Combe, a brother of the well-known physiologist and popular writer, Dr. Andrew Combe of Edinburgh. Doubtless it was through this connexion that in 1838 Dr. Combe issued an edition in Scotland, with numerous notes and comments. (Appendix C.)

The second edition was issued from Burlington, Vt., in 1847, with the same title-page, but after *Second Edition* there are the words, *Corrected by Samuel Beaumont, M.D.*, who was Dr. William Beaumont's cousin. In

the preface to this edition the statement is made that the first edition, though a large one of 3,000 copies, had been exhausted. This does not agree with the statement made in a letter of Dec. 3, 1833, to the Surgeon-General, stating that the edition was to be 1,000 copies. Of course more may have been printed before the type was distributed. While it is stated to be a new and improved edition, so far as I can gather it is a verbatim reprint, with no additional observations, but with a good many minor corrections. In an appendix (D) I give an interesting letter from Dr. Samuel Beaumont with reference to the issue of this edition.

A German edition was issued in 1834, with the following title: *Neue Versuche und Beobachtungen über den Magensaft und die Physiologie der Verdauung, auf eine höchst merkwürdige Weise während einer Reihe von 7 Jahren an einem und demselben Subject angestellt.* Beaumont's earlier paper, already referred to, was abstracted in the *Magazin der ausländischen Litteratur der gesammten Heilkunde*, Hamburg, 1826, and also in the *Archives générales de Médecine*, Paris, 1828. I cannot find that there was a French edition of the work.

The *Experiments and Observations* attracted universal attention, both at home and abroad. The journals of the period contained very full accounts of the work, and within a few years the valuable additions to our knowledge filtered into the textbooks of physiology, which to-day in certain descriptions of the gastric juice and of the phenomena of digestion copy even the very language of the work.

III. The Value of Beaumont's Observations

There had been other instances of artificial gastric fistula in man which had been made the subject of

experimental study, but the case of St. Martin stands out from all others on account of the ability and care with which the experiments were conducted. As Dr. Combe says, the value of these experiments consists partly in the admirable opportunities for observation which Beaumont enjoyed, and partly in the candid and truth-seeking spirit in which all his inquiries seem to have been conducted. 'It would be difficult to point out any observer who excels him in devotion to truth, and freedom from the trammels of theory or prejudice. He tells plainly what he saw and leaves every one to draw his own inferences, or where he lays down conclusions he does so with a degree of modesty and fairness of which few perhaps in his circumstances would have been capable.'

To appreciate the value of Beaumont's studies it is necessary to refer for a few moments to our knowledge of the physiology of digestion in the year 1832, the date of the publication. Take, for example, 'The Work on Human Physiology' (published in the very year of the appearance of Beaumont's book), by Dunglison, a man of wide learning and thoroughly informed in the literature of the subject. The five or six old theories of stomach digestion, concoction, putrefaction, trituration, fermentation, and maceration, are all discussed, and William Hunter's pithy remark is quoted, 'some physiologists will have it, that the stomach is a mill, others, that it is a fermenting vat, others, again, that it is a stew-pan; but, in my view of the matter, it is neither a mill, a fermenting vat, nor a stew-pan; but a stomach, gentlemen, a stomach.'

The theory of chemical solution is accepted. This had been placed on a sound basis by the experiments of Reaumur, Spallanzani, and Stevens, while the studies

of Tiedemann and Gmelin and of Prout had done much to solve the problems of the chemistry of the juice. But very much uncertainty existed as to the phenomena occurring during digestion in the stomach, the precise mode of action of the juice, the nature of the juice itself, and its action outside the body. On all these points the observations of Beaumont brought clearness and light where there had been previously the greatest obscurity.

The following may be regarded as the most important of the results of Beaumont's observations: First, the accuracy and completeness of description of the gastric juice itself. You will all recognize the following quotation, which has entered into the textbooks and passes current to-day:

'Pure gastric juice, when taken directly out of the stomach of a healthy adult, unmixed with any other fluid, save a portion of the mucus of the stomach with which it is most commonly and perhaps always combined, is a clear, transparent fluid; inodorous; a little saltish, and very perceptibly acid. Its taste, when applied to the tongue, is similar to this mucilaginous water slightly acidulated with muriatic acid. It is readily diffusible in water, wine, or spirits; slightly effervesces with alkalis; and is an effectual solvent of the *materia alimentaria*. It possesses the property of coagulating albumen, in an eminent degree; is powerfully antiseptic, checking the putrefaction of meat; and effectually restorative of healthy action, when applied to old, fetid sores and foul, ulcerating surfaces.'

Secondly, the confirmation of the observation of Prout that the important acid of the gastric juice was the muriatic or hydrochloric. An analysis of St. Martin's gastric juice was made by Dunglison, at that time a professor in the University of Virginia, and by Benjamin Silliman of Yale, both of whom determined the presence of free hydrochloric acid. A specimen was

sent to the distinguished Swedish chemist, Berzelius, whose report did not arrive in time to be included in the work. In a letter dated July 19, 1834, he writes to Professor Silliman that he had not been able to make a satisfactory analysis of the juice. The letter is published in *Silliman's Journal*, vol. xxvii, July, 1835.

Thirdly, the recognition of the fact that the essential elements of the gastric juice and the mucus were separate secretions.

Fourthly, the establishment by direct observation of the profound influence of mental disturbances on the secretion of the gastric juice and on digestion.

Fifthly, a more accurate and fuller comparative study of the digestion in the stomach with digestion outside the body, confirming in a most elaborate series of experiments the older observations of Spallanzani and Stevens.

Sixthly, the refutation of many erroneous opinions relating to gastric digestion, and the establishment of a number of minor points of great importance, such as, for instance, the rapid disappearance of water from the stomach through the pylorus, a point brought out by recent experiments, but insisted on and amply proved by Beaumont.

Seventhly, the first comprehensive and thorough study of the motions of the stomach, observations on which, indeed, is based the most of our present knowledge.

And lastly, a study of the digestibility of different articles of diet in the stomach, which remains to-day one of the most important contributions ever made to practical dietetics.

The greater rapidity with which solid food is digested, the injurious effects on the stomach of tea and coffee,

when taken in excess, the pernicious influence of alcoholic drinks on the digestion, are constantly referred to. An all-important practical point insisted on by Beaumont needs emphatic reiteration to this generation:

'The system requires much less than is generally supplied to it. The stomach disposes of a definite quantity. If more be taken than the actual wants of the economy require, the residue remains in the stomach and becomes a source of irritation and produces a consequent aberration of function, or passes into the lower bowel in an undigested state, and extends to them its deleterious influence. Dyspepsia is oftener the effect of over-eating and over-drinking than of any other cause.'

One is much impressed, too, in going over the experiments, to note with what modesty Beaumont refers to his own work. He speaks of himself as a humble 'inquirer after truth and a simple experimenter'.

'Honest objections, no doubt, are entertained against the doctrine of digestion by the gastric juice. That they are so entertained by these gentlemen I have no doubt. And I cheerfully concede to them the merit of great ingenuity, talents, and learning, in raising objections to the commonly received hypothesis, as well as ability in maintaining their peculiar opinions. But we ought not to allow ourselves to be seduced by the ingenuity of argument or the blandishments of style. Truth, like beauty, is "when unadorned adorned the most"; and in prosecuting these experiments and inquiries, I believe I have been guided by its light. Facts are more persuasive than arguments, however ingeniously made, and by their eloquence I hope I have been able to plead for the support and maintenance of those doctrines which have had for their advocates such men as Sydenham, Hunter, Spallanzani, Richerand, Abernethy, Broussais, Philip, Paris, Bostock, the Heidelberg and Paris professors, Dunglison, and a host of other luminaries in the science of physiology.'

In reality Beaumont anticipated some of the most

recent studies in the physiology of digestion. Doubtless many of you have heard of Professor Pawlow's, of St. Petersburg, new work on the subject. It has been translated into German, and I see that an English edition is advertised. He has studied the gastric juice in an isolated pouch, ingeniously made at the fundus of the stomach of the dog, from which the juice could be obtained in a pure state. One of his results is the very first announced by Beaumont, and confirmed by scores of observations on St. Martin, viz. that, as he says, 'the gastric juice never appears to be accumulated in the cavity of the stomach while fasting.' Pawlow has shown very clearly that there is a relation between the amount of food taken and the quantity of gastric juice secreted. Beaumont came to the same conclusion: 'when aliment is received the juice is given in exact proportion to its requirements for solution.' A third point on which Pawlow lays stress is the curve of secretion of the gastric juice, the manner in which it is poured out during digestion. The greatest secretion, he has shown, takes place in the earlier hours. On this point hear Beaumont: 'It (the gastric juice) then begins to exude from the proper vessels and increases in proportion to the quantity of aliment naturally required and received.' And again: 'When a due and moderate supply of food has been received it is probable that the whole quantity of gastric juice for its complete solution is secreted and mixed with it in a short time.' A fourth point, worked out beautifully by Pawlow, is the adaptation of the juice to the nature of the food; I do not see any reference to this by Beaumont, but there are no experiments more full than those in which he deals with the influence of exercise, weather, and the emotions on the quantity of the juice secreted.

IV. Man and Doctor

Sketches of Dr. Beaumont's life have appeared from time to time. There is a worthy memoir by Dr. T. Reyburn in the *St. Louis Medical and Surgical Journal*, 1854, and Dr. A. J. Steele, at the first annual commencement of the Beaumont Medical College, 1887, told well and graphically the story of his life. A few years ago Dr. Frank J. Lutz, of this city, sketched his life for the memorial meeting of the Michigan State Medical Society on the occasion of the dedication of a Beaumont monument.

Among the papers kindly sent to me by his daughter, Mrs. Keim, are many autobiographical materials, particularly relating to his early studies and to his work as a surgeon in the War of 1812. There is an excellent paper in the handwriting, it is said, of his son, giving a summary of the earlier period of his life. So far as I know this has not been published, and I give it in full:

'Dr. William Beaumont was born in the town of Lebanon, Conn., on the 21st day of November, A.D. 1785. His father was a thriving farmer and an active politician of the proud old Jeffersonian school, whose highest boast was his firm support and strict adherence to the honest principles he advocated. William was his third son, who, in the winter of 1806-7, in the 22nd year of his age, prompted by a spirit of independence and adventure, left the paternal roof to seek a fortune and a name. His outfit consisted of a horse and cutter, a barrel of cider, and one hundred dollars of hard-earned money. With this he started, laying his course northwardly, without any particular destination, Honour his rule of action, Truth his only landmark, and trust placed implicitly in Heaven. Traversing the western part of Massachusetts and Vermont in the spring of 1807 he arrived at the little village of Champlain, N.Y., on the Canada frontier—an utter stranger, friendless and alone. But honesty of purpose and true energy invariably work good results. He soon gained the people's confidence,

and was entrusted with their village school, which he conducted about three years, devoting his leisure hours to the study of medical works from the library of Dr. Seth Pomeroy, his first patron. He then went over to St. Albans, Vt., where he entered the office of Dr. Benjamin Chandler and commenced a regular course of medical reading, which he followed for two years, gaining the utmost confidence and esteem of his kind preceptor and friends. About this time the war of 1812 commenced, and he applied for an appointment in the U.S. Army, successfully. He was appointed assistant-surgeon to the Sixth Infantry, and joined his regiment at Plattsburgh, N.Y., on the 13th of September, 1812. On the 19th of March, 1813, he marched from Plattsburgh with the First Brigade, for Sackett's Harbour, where they arrived on the 27th inst. Here he remained in camp till the 22nd of April, when he embarked with the troops on Lake Ontario. His journal will best tell this portion of his history:

'"April 22, 1813.—Embarked with Captain Humphreys, Walworth and Muhlenburg, and companies on board the schooner *Julia*. The rest of the brigade, and the Second, with Foresith's Rifle Regiment and the Eighth Artillery —on board a ship, brig, and schooner—remain in the harbour till next morning.

'"23rd.—11 o'clock a.m.—Weighs anchor and put out under the impression we were going to Kingston. Got out 15 or 20 miles—encountered a storm—wind ahead and the fleet returned to harbour.

'"24th.—6 o'clock a.m.—Put out with a fair wind—mild and pleasant—the fleet sailing in fine order.

'"26th.—Wind pretty strong—increasing—waves run high, tossing our vessels roughly. At half-past four pass the mouth of Niagara river. This circumstance baffles imagination as to where we are going—first impressed with the idea of Kingston—then to Niagara—but now our destination must be 'Little York'. At sunset came in view of York Town and the Fort, where we lay off some 3 or 4 leagues for the night.

'"27th.—Sailed into harbour and came to anchor a little below the British Garrison. Filled the boats and effected a landing, though not without difficulty and the loss of some men. The British marched their troops down the beach to cut us off as landing, and, though

they had every advantage, they could not effect their design. A hot engagement ensued, in which the enemy lost nearly a third of their men, and were soon compelled to quit the field, leaving their dead and wounded strewn in every direction. They retired to the Garrison, but from the loss sustained in the engagement, the undaunted courage of our men, and the brisk firing from our fleet, with the 12 and 32-pounders, they were soon obliged to evacuate it and retreat with all possible speed. Driven to this alternative, they devised the inhuman project of blowing up their magazine, containing 300 pounds of powder, the explosion of which had wellnigh destroyed our army. Over 300 were wounded and about 60 killed on the spot, by stones of all dimensions falling, like a shower of hail, in the midst of our ranks. A most distressing scene ensues in the hospital. Nothing is heard but the agonizing groans and supplications of the wounded and the dying. The surgeons wade in blood, cutting off arms and legs and trepanning heads, while the poor sufferers cry, 'O, my God! Doctor, relieve me from this misery! I cannot live!' 'Twas enough to touch the veriest heart of steel and move the most relentless savage. Imagine the shocking scene, where fellow beings lie mashed and mangled—legs and arms broken and sundered—heads and bodies bruised and mutilated to disfigurement! My deepest sympathies were roused—I cut and slashed for 36 hours without food or sleep.

'"29th.—Dressed upwards of 50 patients—from simple contusions to the worst of compound fractures—more than half the latter. Performed two cases of amputation and one of trepanning. At 12 p.m. retired to rest my fatigued body and mind."

'One month after the taking of York he witnessed the storming of Fort George. The troops were transported from York to "Four-Mile Creek" (in the vicinity of Ft. George), where they encamped from the 10th of May to the 27th, when they advanced to the attack. His journal runs thus:

'"May 27 (1813).—Embarked at break of day—Col. Scott with 800 men, for the advanced guard, supported by the First Brigade, commanded by General Boyd, moved in concert with the shipping to the enemy's shore and landed under their battery and in front of their fire

with surprising success, not losing more than 30 men in the engagement, though the enemy's whole force was placed in the most advantageous situation possible. We routed them from their chosen spot—drove them from the country and took possession of the town and garrison."

'On the 11th of September, 1814, he was at the Battle of Plattsburgh, still serving as assistant-surgeon, though doing all the duty of a full surgeon. At the close of the war, in 1815, when the army was cut down, he was retained in service, but resigned soon after, deeming himself unjustly treated by the government in having others, younger and less experienced, promoted over him.

'In 1816 he settled in Plattsburgh and remained there four years in successful practice. In the meantime his army friends had persuaded him to join the service again, and, having applied, he was reappointed, in 1820, and ordered to Ft. Mackinac as post-surgeon. At the end of the first year he obtained leave of absence, returned to Plattsburgh, and married one of the most amiable and interesting ladies of that place. (She still survives her honoured husband, and in her green old age is loved devotedly by all who know her.) He returned to Mackinac the same year, and in 1822 came in possession of Alexis St. Martin, the subject of his *Experiments on the Gastric Juice*. By the accidental discharge of his gun, while hunting, St. Martin had dangerously wounded himself in the abdomen and came under the treatment of Dr. Beaumont, who healed the wound (in itself a triumph of skill almost unequalled) and in 1825 commenced a series of experiments, the results of which have a world-wide publication. These experiments were continued, with various interruptions, for eight years, during which time he was ordered from post to post—now at Niagara, N.Y., anon at Green Bay, Mich., and finally at Fort Crawford, on the Mississippi. In 1834 he was ordered to St. Louis, where he remained in service till 1839, when he resigned. He then commenced service with the citizens of St. Louis, and from that time till the period of his last illness, enjoyed an extensive and distinguished practice, interrupted only by the base attacks of a few disgraceful and malicious knaves (self-deemed members of the medical profession) who sought to destroy a reputa-

tion which they could not share. They gained nothing except some little unenviable notoriety, and they have skulked away like famished wolves, to die in their hiding-places.'

The dates of Beaumont's commissions in the army are as follows: Surgeon's Mate, Sixth Regiment of Infantry, December 2, 1812; Cavalry, March 27, 1819; Post-Surgeon, December 4, 1819; Surgeon First Regiment and Surgeon, November 6, 1826.

From the biographical sketches of Reyburn, Steele, and Lutz, and from the personal reminiscences of his friends, Drs. J. B. Johnson, S. Pollak, and Wm. McPheeters, who fortunately remains with you, full of years and honours, we gather a clearly defined picture of the latter years of his life. It is that of a faithful, honest, hard-working practitioner, doing his duty to his patients, and working with zeal and ability for the best interests of the profession. The strong common sense which he exhibited in his experimental work made him a good physician and a trusty adviser in cases of surgery. Among his letters there are some interesting pictures of his life, particularly in his letters to his cousin, Dr. Samuel Beaumont. Writing to him April 4, 1846, he says:

'I have a laborious, lucrative, and increasing practice, more than I can possibly attend to, though I have an assistant, Dr. Johnson, a young man who was a pupil of mine from 1835 to 1840. He then went to Philadelphia a year or two to attend lectures, and graduated, and returned here again in 1842, and has been very busy ever since, and is so now, but notwithstanding I decline more practice daily than half the doctors in the city get in a week. You thought when you were here before that there was too much competition for you ever to think of succeeding in business here—there is ten times as much now, and the better I succeed and prosper for it. You must come with a different feeling from your

former—with a determination to follow in my wake and stem the current that I will break for you. I am now in the grand climacteric of life, three-score years and over, with equal or more zeal and ability to do good and contribute to professional service than at forty-five, and I now look forward with pleasing anticipation of success and greater usefulness—have ample competence for ourselves and children, and no doleful or dreaded aspect of the future—to be sure I have to wrestle with some adverse circumstances of life, and more particularly to defend myself against the envious, mean, and professional jealousies and the consequent prejudices of some men, but I triumph over them all and go ahead in defiance of them.'[1]

His professional work increased enormously with the rapid growth of the city, but he felt, even in his old age, that delicious exhilaration which it is your pleasure and privilege to enjoy here in the west in a degree rarely experienced by your eastern confrères. Here is a cheery paragraph from a letter dated Oct. 20, 1852: 'Domestic affairs are easy, peaceable, and pleasant. Health of community good—no severe epidemic diseases prevalent—weather remarkably pleasant—business of all kinds increasing—product of the earth abundant—money plenty—railroads progressing with almost telegraphic speed—I expect to come to Plattsburgh next summer all the way by rail.'

But work was becoming more burdensome to a man nearing threescore years and ten, and he expresses it in another letter when he says: 'There is an immense professional practice in this city. I get tired of it, and have been trying hard to withdraw from it altogether, but the more I try the tighter I seem to be held to it

[1] He had evidently hopes that when his cousin and son arrived with Alexis they would arrange and plan for another series of experiments, and in another year or two make another book, better than the old one.

by the people. I am actually persecuted, worried, and almost worn out with valetudinarian importunities and hypochondriacal groans, repinings, and lamentations—Amen.'

He continued at work until March, 1853, when he had an accident—a fall while descending some steps. A few weeks later a carbuncle appeared on the neck, and proved fatal, April 25. One who knew him well wrote the following estimate (quoted by Dr. F. J. Lutz in his sketch of Beaumont):

'He was gifted with strong natural powers, which, working upon an extensive experience in life, resulted in a species of natural sagacity, which, as I suppose, was something peculiar in him, and not to be attained by any course of study. His temperament was ardent, but never got the better of his instructed and disciplined judgement, and whenever or however employed, he ever adopted the most judicious means for attaining ends that were always honourable. In the sick room he was a model of patience and kindness; his intuitive perceptions, guiding a pure benevolence, never failed to inspire confidence, and thus he belonged to that class of physicians whose very presence affords Nature a sensible relief.'

You do well, citizens of St. Louis and members of our profession, to cherish the memory of William Beaumont. Alive you honoured and rewarded him, and there is no reproach against you of neglected merit and talents unrecognized. The profession of the northern part of the state of Michigan has honoured itself in erecting a monument to his memory near the scene of his disinterested labours in the cause of humanity and science. His name is linked with one of your educational institutions, and joined with that of a distinguished labourer in another field of practice. But he has a far higher honour than any you can give

him here—the honour that can only come when the man and the opportunity meet—and match. Beaumont is the pioneer physiologist of this country, the first to make an important and enduring contribution to this science. His work remains a model of patient, persevering investigation, experiment, and research, and the highest praise we can give him is to say that he lived up to and fulfilled the ideals with which he set out, and which he expressed when he said: 'Truth, like beauty, is "when unadorned, adorned the most", and, in prosecuting these experiments and inquiries, I believe I have been guided by its light.'

Appendix A

The Beaumont papers in the possession of his daughter, Mrs. Keim, of St. Louis, consist of (1) interesting certificates from his preceptors, Dr. Pomeroy and Dr. Chandler, the licence from the Third Medical Society of Vermont, the commissions in the U.S. Army, several certificates of honorary membership in societies, and the parchment of the M.D. degree conferred upon him, *honoris causa*, by the Columbian University of Washington, 1833; (2) a journal containing his experiences in the War of 1812, from which I have given an extract, a journal of his trip to Fort Mackinac, a journal containing the reports of many cases, among them that of St. Martin (in addition there is a protocol of the case in loose folio sheets), a journal of the experiments, and a commonplace book of receipts and jottings; (3) an extensive correspondence relating to St. Martin and the book, and many rough drafts of sections of the book; (4) a large mass of personal correspondence, much of it of interest as relating to conditions of practice in St. Louis.

The family has a miniature of him in his army uniform; the only picture which has been reproduced is of an older man from a daguerreotype. It is satisfactory to know that the ultimate destination of this most valuable collection of papers is

the Surgeon-General's Library of the United States Army, of which Dr. Beaumont was so distinguished an ornament.

Appendix B

On Oct. 20, 1852, he writes to his cousin, Dr. Samuel Beaumont, on the subject of 'that old, fistulous Alexis', as he calls him. 'Alexis' answer to yours is the very facsimile or stereotype of all his Jesuitical letters to me for the last fifteen years. His object seems only to be to get a heavy bonus and undue advance from me and then disappoint and deceive me, or to palm and impose himself and whole family upon me for support for life.

'I have evaded his designs so far; but I verily fear that the strong and increasing impulse of conscious conviction of the great benefits and important usefulness of further and more accurate physiological investigation of the subject will compel me to still further efforts and sacrifices to obtain him. Physiological authors and most able writers on dietetics and gastric functions generally demand it of me in trumpet tones.

'I must have him at all hazards, and obtain the necessary assistance to my individual and private efforts or transfer him to some competent scientific institution for thorough investigation and report—I must retrieve my past ignorance, imbecility, and professional remissness of a quarter of a century, or more, by double diligence, intense study, and untiring application of soul and body to the subject before I die—

> Should posthumous Time retain my name,
> Let historic truths declare my fame.

'Simultaneous with this I write to Mr. Morrison and Alexis my last and final letters—perhaps, proposing to *him*, as bribe to his cupidity, to give him $500 to come to me *without* his family, for one year—$300 of them for his salary, and $200 for the support and contentment of his family to remain in Canada in the meantime—with the privilege of bringing them on here another year, upon my former proposition of $300 a year, at his own expense and responsibility, and support them himself after they get here out of his $300 salary—I think he will take the bait and come on this fall, and when I get

him alone again into my keeping and engagement, I will take good care to control him as I please.'

Appendix C

Letter from Dr. Andrew Combe, May 1, 1838:

'My Dear Sir—May I beg your acceptance of the accompanying volumes as a small expression of my respect for your character and scientific labours. I need not detain you by repeating in this note the high estimation in which I hold you. The volumes herewith sent will, I trust, convince you of the fact, and that it will not be my fault if you do not receive the credit justly due to your valuable and disinterested services. I remain, My Dear Sir,

'Very respectfully yours,

'Andw. Combe.'

Appendix D

Letter from Dr. Samuel Beaumont, March 16, 1846:

'Your letter of the 1st of February arrived here in the course of mail, and I have attended to the business which you authorized me to do. I am afraid, however, that you will be disappointed, and perhaps dissatisfied with the arrangement. Mr. Goodrich came here some five or six days after I received your letter, and made his proposal, which was to give you every tenth copy for the privilege of publishing an edition. The number he proposed to publish was fifteen hundred, which would give you 150 copies. I did not like to close the bargain on this condition, and he was not disposed to give any more. This was in the evening. I told him to give me time till the next morning, and I would make up my mind. In the morning, after consultation, I concluded to offer him the copyright for the unexpired time (only one year) for two hundred copies. After some demurring, we closed the bargain. I then thought and I still think it was not enough; but it was all I could get. In making up my mind the following considerations presented themselves: First, that the copyright would expire in one year, and he would then have the

right to print it without consulting the author; second, that it would be somewhat mortifying to the author not to have his work republished, even if no great pecuniary benefit was to be obtained by such a republication; and it appeared to me to be quite certain that a new edition would not be soon printed, if I let this opportunity slip; third, I have been long anxious, as I presume you have been, to see the work gotten up in a better dress than it originally had, and in a way which will give it a general credit and more notoriety among all classes of the reading public than it has heretofore possessed—in fact, make it a standard work; fourth, it has given us a chance to give it a thorough correction, a thing which was very desirable. The work, you recollect, was got up in a great hurry, and a great many errors escaped our notice. You may also recollect that the Philadelphia reviewer spoke of the inaccuracies in the work. And he had reason enough for it. In looking over the work critically with a view of correction, I have been perfectly astonished at the errors that occur on almost every page. And although we understood perfectly what we meant to say, the reader would find it somewhat difficult to decipher our meaning. In the first 140 pages I made nearly 300 corrections. These are practically merely verbal alterations or change of phrases or sentences so as to make them more accurate or perspicuous. I have in no case so changed the text as to give it a different meaning. I flatter myself that it will now be more worthy the public patronage; and if for no other, this chance for correction I consider alone almost a sufficient remuneration for the brief limits of the copyright. I have also written a preface for the second edition, making quotations from American and European authorities in praise of the merits of the work. From delicacy I have written this as from the publisher. I think it is pretty well done. The work will probably be published in the course of about a month, and those designed for you will be delivered to me, when I shall send them to you. He guarantees not to sell in the state of Missouri, or the states south and west of that state. But that, of course, is all gammon. The book will be thrown into market, and he cannot control the direction in which it will go.'

THE INFLUENCE OF LOUIS ON AMERICAN MEDICINE[1]

Harvey and Sydenham, types of the scientific and the practical physician, though contemporaries, were uninfluenced, so far as we know, by each other's work or method. Harvey had little reputation as a practical physician, and Sydenham cared little for theories or experiment. Modern scientific medicine, in which these two great types meet, had its rise in France in the early days of this century. True, there had lived and worked in England the greatest anatomist and medical thinker of modern times; but John Hunter, to whose broad vision disease was but one of the processes of nature to be studied, was as a voice crying in the wilderness to the speculative, theoretical physicians of his day.

Bichat's *Anatomie Générale* laid the foundation of the positive or modern method of the study of medicine, in which theory and reasoning were replaced by observation and analysis. Laennec, with the stethoscope, and with an accurate study of disease at the bedside and in the post-mortem room, almost created clinical medicine as we know it to-day.

The study of fevers occupied the attention of all the great physicians of the time. Fever, what it was, how it should be treated. What a vast literature exists

[1] Read before the Stillé Society of the Medical Department of the University of Pennsylvania. Reprinted from *The Johns Hopkins Hospital Bulletin*, Nos. 77–78, August–September, 1897.

between Sydenham and Broussais! What a desolate sea of theory and speculation!

No one had been more influenced by Bichat's brilliant teachings than Broussais, who ruled supreme in the medical world of Paris in the early decades of the nineteenth century. A strong believer in careful observations at the bedside and in the post-mortem room, he was led into hopeless error in attributing fevers and many other disorders to irritation in the stomach and intestines—his gastro-enteritis.

Writing in the *American Medical Recorder*, July, 1821, an American student, Dr. F. J. Didier, said of the Paris professors of that date, 'They were always talking of Hippocrates, Galen, Celsus, &c., as if not a particle had been added to the stock of knowledge since their time.' And again, 'The doctrines of John Brown, mixed up with the remnants of humoral pathology, form the basis of the present system.'

The same mixture prevailed early in the fourth decade, as you may see from Broussais' *Pathology*, the American edition of which was issued in 1832, and from Jackson's (Samuel) *Principles of Medicine*, published in the same year.

Upon this scene, when Broussais was at the height of his fame, came Louis. He, with his friends Andral and Chomel, were very important factors in substituting finally in the study of medicine, for speculation and theory, observation and method.

The chief facts in Louis' life may be thus briefly stated. He was born in 1787 at Aï. He began the study of law, but abandoned it for that of medicine. He seems not to have been of a very strong constitution, as he did not pass the inspection for military service. He began the study of medicine at Rheims,

and completed his course in Paris, where he graduated in 1813, in the twenty-seventh year of his age. While waiting at home, hesitating what he should do, M. le comte de Saint-Priest, who occupied an official position in Russia, happened to stay for a few hours in the town of Aï to see Louis' family, and it was suggested that the young physician should accompany him to Russia. He consented, and in St. Petersburg obtained a diploma to practise. For three years he seems to have had no settled abode, but wandered about with his friend, who was governor of one of the provinces. He then settled in Odessa, where he remained for four years and practised with great success. In the last year of his stay in Odessa he was very much disturbed by the high rate of mortality in children with diphtheria, and this appears to have determined him to abandon for a time the practice of medicine and to devote himself to study. With this object in view he returned to Paris, and for six months attended the practice at the Children's Hospital. Among the younger physicians in Paris he found an old fellow pupil, Chomel, physician to La Charité, who offered him opportunities for work in his wards. Louis at this time was thirty-four years of age. Here for six years uninterruptedly he set himself to work to study disease in the wards and in the post-mortem room. At first he appears to have occupied the position simply as a voluntary assistant and friend of Chomel, but subsequently he became his *chef-de-clinique*, and during this period he occupied a room in the entresol of the hospital. He was a voluminous note-taker and collected in this time an enormous number of important facts.

This remarkable feature in Louis' life has scarcely been dwelt upon sufficiently. I know of no other parallel instance in the history of medicine. It is worth

while reading the brief extract from Dr. Cowan's introduction to his translation of the work on Phthisis.

'He entered the hospital of La Charité as a *clinical clerk*, under his friend, Professor Chomel. For nearly *seven years*, including the flower of his bodily and mental powers (from the age of thirty-three to forty), he consecrated the whole of his time and talents *to rigorous, impartial observation*. All private practice was relinquished, and he allowed no considerations of personal emolument to interfere with the resolution he had formed. For some time his extreme minuteness of inquiry and accuracy of description were the subjects of sneering and ridicule, and "To what end?" was not infrequently and tauntingly asked. The absence of any immediate result seemed for a time to justify their contempt of a method involving too much labour and personal sacrifice to be generally popular or easily imitated; and M. Louis himself, at moments, almost yielded to the increasing difficulties of the task he had undertaken. No sooner, however, were his facts sufficiently numerous to admit of numerical analysis than all doubt and hesitation were dissipated, and the conviction that the path he was pursuing could alone conduct him to the discovery of truth became the animating motive for future perseverance. Many of the results to which he arrived soon attracted general attention, and among those who had formerly derided his method while they admired his zeal, he found many to applaud and a few to imitate. From this moment may be dated the presence of that strong impression of the necessity of exact observation by which the school of Paris has been since so distinguished, and which is now gradually pervading the medical institutions of the continent and our own country; it is undoubtedly to the author of the present volume that we ought to ascribe the practical revival of that system, which had for ages been verbally recognized but never before rigorously exemplified.'

The following works appeared as a direct result of his studies during these six years:[1]

[1] *Brief Memories of Louis and some of his Contemporaries.* H. I. Bowditch, Boston, 1872.

'In 1823, a memoir on perforation of the small intestines, in acute diseases; a second, on croup in the adult; a third, on the communications between the right and left cavities of the heart (Archives de médecine).

'In 1824, two memoirs on the pathological anatomy of the mucous membrane of the stomach; another on pericarditis.

'In 1826, a memoir on abscess of the liver; another on the condition of the spinal marrow in Pott's disease; a third on sudden and unforeseen deaths; a fourth upon slow but anticipated deaths, which anatomy will not explain; a fifth on the treatment of taenia by the Darbon potion (Archives de médecine).

'In 1825, his Anatomical Researches, &c., on Phthisis (1 vol. 8vo); reprinted with many additions in 1843.

'In 1828, Researches on the Typhoid Affection or Fever (2 vols. 8vo); reprinted with many additions in 1841.'

Louis introduced what is known as the Numerical Method, a plan which we use every day, though the phrase is not now very often on our lips. The guiding motto of his life was 'Ars medica tota in observationibus', in carefully observing facts, carefully collating them, carefully analysing them. To get an accurate knowledge of any disease it is necessary to study a large series of cases and to go into all the particulars—the conditions under which it is met, the subjects specially liable, the various symptoms, the pathological changes, the effects of drugs. This method, so simple, so self-evident, we owe largely to Louis, in whose hands it proved an invaluable instrument of research. He remarks in one place that the edifice of medicine reposes entirely upon facts, and that truth cannot be elicited but from those which have been well and completely observed.

American medicine felt the influence of Louis through two channels, his books and his pupils. Let us speak

first of the former. No French writer of the nineteenth century has had such a large audience in this country; all of his important works were translated and widely read. The work on phthisis, the first important outcome of five years' hard work at La Charité in Chomel's wards, was published in 1825. Much had already been done by physicians of the French school on this subject. Bayle's important *Recherches* had been issued in 1810, and Laennec had revolutionized the study of phthisis by the publication of his treatise on auscultation. I cannot enter into any detailed analysis of the work, but it is one which I can commend to your notice as still of great value, particularly as a model of careful observation. The work was based upon the study of 123 cases observed in Chomel's clinic. The lesions observed at autopsy are first described under the different organs, with great accuracy and detail, and then summarized, following which is an elaborate description of the symptomatology. I do not know of any single work on pulmonary tuberculosis which can be studied with greater profit to-day by the young physician. The eighty years which have elapsed since its publication, and the changes which have taken place in our ideas of tuberculosis, diminish naught from the value of his careful anatomical and clinical presentation of the subject.

In 1829 appeared his second great work, *Anatomical, Pathological and Therapeutical Researches upon the disease known under the name of gastro-enterite, putrid, adynamic, ataxic, typhoid fever, &c., compared with the most common acute diseases.* It was based upon 138 observations made between 1822 and 1827. He analysed and determined the lesions found in fifty patients who had died of the typhus fever, and compared these with alterations found in other acute diseases. Altogether for this work

he states that he analysed the changes in the viscera of 133 subjects and the symptoms of nearly 900. In his introduction to this work he quotes a sentence from Rousseau which is always to be kept in mind: 'I know that truth lies in the facts, and not in the mind that judges of them, and that the less I introduce what is merely my own into the deductions I make from them, the more certain I shall be of approaching the truth.' This work was translated by Dr. H. I. Bowditch in 1836. At the time of Louis' observations, although differences were recognized between the various forms of continued fevers, the profession had no accurate knowledge of the subject. It so happened that at this period the disease prevailing at Paris known as typhus was almost entirely what we now call typhoid fever, so that the anatomical lesions found by Louis in his fifty autopsies were chiefly in the intestines; in all the Peyer's glands were diseased. His method was to analyse carefully the appearances found in the different organs in the series of fever cases, and compare them with patients who had died of other acute diseases; thus of course the contrast was striking in the very matter of involvement of Peyer's glands, which were more or less seriously changed in structure in all the patients with the fever, while in the persons who died of other acute diseases the elliptical patches had no special redness or softening.

The symptomatology was also given in great detail, and the same painstaking comparisons were instituted between the subjects of the typhoid affection and those of other acute diseases. Louis' work convinced a majority of the members of the Paris school that the essential lesions in continued fevers were in the intestines, and Louis himself appears not to have had any idea whatever that the disease which he was

studying was in any way different from the disease prevailing in other parts of Europe which we now know as typhus fever.

The next important memoir, the essay on Blood-letting, had a very potent influence on professional opinion in this country. It appeared in Paris in 1835 and was translated by G. C. Putnam, with an introduction and appendix by Dr. James Jackson. As this learned physician remarks in his preface, 'If anything may be regarded as settled in the treatment of disease, it is that blood-letting is useful in the class of diseases called inflammatory, and especially in inflammations of the thoracic viscera.' When one reads the reports of the treatment by bleeding up to about the year 1840, one is almost forced to ask the question, Are the diseases the same? or surely the patients must have possessed much more powerful constitutions than those which we are now called upon to treat.

At the time of Louis' return to Paris, under the influence of Broussais' doctrine of irritation, local and general blood-letting was practised more extensively than at any previous period in the history of medicine. As an interesting illustration it may be mentioned that the trade in France and Spain in leeches had developed to proportions which assumed really those of a national industry, and even in this country I believe one of the medical societies offered a prize for the best demonstration of the practical method of cultivating leeches for medicinal purposes.

It must have been a terrible shock to Broussais and his adherents when Louis attacked the subject of blood-letting in pneumonia with his numerical method. For this purpose he analysed 78 cases, 28 of which proved fatal, and in a second series 29 cases with 4 deaths.

Among his conclusions were, that pneumonitis is never arrested at once by blood-letting, and that the supposed happy effect on the progress of the disease was very much less than was commonly believed. Incidentally he remarks with reference to the practice of blistering which was in vogue at the time, that he had rejected the practice after the treatment of 140 cases of pleurisy without losing a case. I would refer you particularly to Putnam's translation of this article, which you can obtain in any of the libraries, not only for Louis' work, but for the excellent introduction by Dr. Jackson on the value of the numerical method in medicine, and also for the appendices, analysing the pneumonia cases of the Massachusetts General Hospital from 1824 to 1834 (inclusive).

To American students one of Louis' most valuable works is his *Research on the Yellow Fever in* 1828. On November 1, 1828, Louis, with Chervin and Trousseau, left for Gibraltar, where the disease prevailed. They made a very careful study of the symptoms and morbid anatomy, and on their return to Paris made a report to the Academy of Medicine, but the work remained in manuscript until Dr. Geo. C. Shattuck translated it into English and it was published by the Massachusetts Medical Society as vol. x of their *Library of Practical Medicine.* The work did not appear in French until 1844. It is chiefly valuable as a very accurate and careful record of a series of cases studied clinically and anatomically.

Powerful as was the effect of Louis' writings on American medicine, it cannot compare with the influence which he exerted through his pupils, who 'caught his clear accents, learned his great language, made him their model'. Of the great triumvirate of

the French school of the fourth decade, Louis possessed a singular power of attracting hard-working, capable men, and this in spite of the fact that his rivals and friends, Chomel and Andral, possessed more brilliant gifts of a certain kind. As a writer in the *Lancet* said (1872, ii), 'Year by year fresh bands of students came to imbibe from his lips the instruction which their predecessors had abandoned with reluctance, till his academic progeny knew no distinction of race or even colour, but coalesced into a noble band of enthusiasts in the cause of medicine, of science, and of humanity.' In this academic progeny Louis' American pupils take a very unusual position. Among the thousands in the profession of this country who have during the nineteenth century sought light and learning in the older lands, the group of young men who studied in Paris, between 1830 and 1840, had no predecessors and have had no successors. Partly because the time was ripe and they were active agents in bringing the new art and science to the New World, partly owing to inherent capabilities, but not a little because the brightest minds among them fell under the influence of Louis—they more than any others gave an impetus, which it still feels, to the scientific study of medicine in the United States.

There had been, of course, in Paris, many students from this country prior to 1830, but they do not form a school recognizable to us at present. One name comes to my mind, that of the Rhode Island philosopher, Elisha Bartlett, a peripatetic of the peripatetics, in the days when men moved from city to city, like the Sophists of ancient Greece. I do not know whether, when in Paris in 1828, he came personally under Louis' influence—probably not, as Louis spent part of that

year in Spain—but he brought back recent French methods, with Gallic lucidity and a keen appreciation of the value of the numerical method. His well-known work on Typhus and Typhoid Fever, issued in 1842, is in itself a lasting witness to the intelligence and progressive character of the younger teachers of that day. With a clear separation of Typhus, Typhoid, the Periodic, and Yellow Fevers, it had at the date of its publication no counterpart in European literature, and is in remarkable contrast to the chaotic treatises of Armstrong, Fordyce, Tweedie, Southwood Smith, and others.

The following were among the American students in Paris between 1830 and 1840 (this list does not aim at completeness):

From Boston: James Jackson, jun., H. I. Bowditch, Oliver Wendell Holmes, George C. Shattuck, jun., John D. Fisher, J. C. Warren (then past middle age), and J. Mason Warren.

From New York: John A. Swett, Abraham Dubois, Alonzo Clark, Charles L. Mitchell, Charles D. Smith, Valentine Mott, sen., and John T. Metcalfe.

From Philadelphia: Geo. W. Norris, W. W. Gerhard, Caspar W. Pennock, Thomas Stewardson, Alfred Stillé, Thomas D. Mütter, E. Campbell Stewart, Charles Bell Gibson, John B. Biddle, David H. Tucker, Meredith Clymer, Wm. P. Johnston, W. S. W. Ruschenberger, Edward Peace, William Pepper (primus).

From Baltimore: William Power.

From the South: Peter C. Gaillard, Gibbes, and Peyre Porcher, of Charleston; J. L. Cabell, L. S. Joynes, Selden, and Randolph, of Virginia.

'And many more whose names on earth are dark'—men of the stamp of Dr. Bassett of Alabama, who felt the strong impulsion to know the best that the

world offered, every one of whom has left a deep and enduring impression in his sphere of work.

It would be impossible to tell in detail how Louis' students brought back his spirit and his methods to their daily work, and of the revolution which they gradually effected in the study and in the treatment of disease. I can best, perhaps, fulfil my object by referring somewhat fully to two of the most distinguished among them, James Jackson, jun., and W. W. Gerhard.

James Jackson, jun., is the young Marcellus among the physicians of this country, 'the young Marcellus, young, but great and good.' I do not know in our profession of a man who died so young who has left so touching a memory. He was the son of Dr. James Jackson, of Harvard, one of the most distinguished of New England's physicians, a man to whom our generation owes a heavy debt, since he, with Jacob Bigelow, was mainly instrumental in bringing about more rational ideas on the treatment of disease. Of Louis' pupils from this side of the water, young Jackson seems to have been his special favourite. After taking the B.A. degree at Cambridge in 1828, Jackson attended the medical lectures at Harvard, and in the spring of 1831 went to Paris, where he remained until the summer of 1832. Returning home in 1833, he graduated in medicine at Harvard in 1834. In the two years and a half of his studies in this country before going abroad he had had exceptional opportunities with his father at the Massachusetts General Hospital, and showed his early industry and ability by taking one of the Boylston Prizes before the completion of his second year of study.

In Paris he attended the practice of La Pitié and St. Louis. He soon became devoted to Louis, and by

him was utilized to the full in the cholera epidemic in 1832. Two letters from Louis to James Jackson, sen., show how important he thought a prolonged period of study was for a young man. He says:

'I pointed out to him (James Jackson, jun.) the advantage it would be for science and for himself if he would devote several years exclusively to the observation of diseases. I now retain the same opinion, and am strengthened in it; for the more I become acquainted with, and the more I notice him applying himself to observation, the more I am persuaded that he is fitted to render real service to science, to promote its progress. I find that he would be well pleased to follow for a certain period the vocation for which nature has fitted him; but he has stated to me that there are many difficulties which would prevent his devoting himself exclusively to observation for several years. But can these difficulties be insurmountable?'

And again:—

'Let us suppose that he should pass four more years without engaging in the practice of medicine, what a mass of positive knowledge will he have acquired! How many important results will he have been able to publish to the world during that period! After that he must necessarily become one of the bright lights of his country; others will resort to him for instruction, and he will be able to impart it with distinguished honour to himself. If all things be duly weighed, it will appear that he will soon redeem the four years, which men of superficial views will believe him to have lost.'

In another letter, the following year, just before young Jackson's departure from Paris, he refers again to this question, and urges Dr. Jackson to allow his son to devote himself exclusively to observation for several years in Boston. The extract from this letter is worth quoting.

'Think for a moment, sir, of the situation in which we physicians are placed. We have no legislative chambers to enact laws for us. We are our own law-

givers; or rather, we must discover the laws on which our profession rests. We must *discover* them and not invent them; for the laws of nature are not to be invented. And who is to discover these laws? Who should be a diligent observer of nature for this purpose, if not the son of a physician, who has himself experienced the difficulties of the observation of disease, who knows how few minds are fitted for it, and how few have at once the talents and inclination requisite for the task? The inclination especially, for this requires that the observer should possess a thorough regard for truth, and a certain elevation of mind, or rather of character, which we rarely meet with. All this is united in your son. You ought—for in my opinion it is a duty—you ought to consecrate him for a few years to science. This, sir, is my conviction, and I hope it will be yours also. I know very well that every one will not be of the same opinion; but what matters it, if it be yours?—if you look upon a physician, as I do, as holding a sacred office, which demands greater sacrifices than are to be made in any other profession.'

Young Jackson's letter to his father, just as he was quitting Paris, indicates on what affectionate terms he had lived with Louis.

'In two hours I am out of Paris. I will not attempt to describe to you the agony it gives me to quit Louis. He is my second father, and God knows that is a name I of all men cannot use lightly. I may not persuade you to look upon him with my eyes exactly as a scientific man; but in your heart he must have the share of a brother; for he almost shares my affection with you. From one upon whom I had no claims but those which my life and mind and habits gave me, I have experienced a care, an affection which I never could dare expect from any but my dear father, and which I shall ever feel to be the most honourable and truly worthy prize of my life.'

He seems to have inspired the same tender feelings in all his American students. In the *Memoir* of Dr.

Bowditch, to which I have already referred, he speaks of Louis' fatherly kindness to him during a prolonged attack of rheumatic fever lasting for many weeks.

Young Jackson was one of the founders, in 1832, of the Society for Medical Observation, which consisted of the ablest of the students of Louis, Chomel, and Andral. During his stay in Paris he made an important study of cholera, which was published in this country in 1832. It was most timely, as it gave the profession here a very clear and accurate description of the disease, of which up to that time they had had no experience. Jackson's name, too, will always be associated with the studies upon emphysema, and he is the discoverer of the prolonged expiration in early pulmonary tuberculosis.

Returning to Boston in the autumn of 1833, he spent the winter preparing for his degree and elaborating the notes which he had taken in Paris. In March he fell ill with a dysentery, which proved fatal on the twenty-seventh of the month, in the twenty-fifth year of his age. I know of no young man in the profession who had given pledges of such exceptional eminence. His influence in extending Louis' methods and views throughout New England was chiefly through his father, who, though a man approaching his sixtieth year, became an ardent follower of Louis and the numerical method.

In Oliver Wendell Holmes's recently issued Biography you will find a delightful description of life at the Medical School of Paris at this period. He bears witness to the good effect which Jackson's warm friendship with Louis had had in promoting the interests of American students. I may conclude with a quotation from Dr. Jackson's, sen., memoir:

'At the suggestion and request of one of my most

judicious brethren I shall add that my son's influence on the profession here, in the short time he was with us, was of a very salutary description. This gentleman states that my son not only caused others, who had not yet read the works of M. Louis, to study them with care, but that he induced among the rising members of the profession in our own city the habits of thorough observation of the phenomena of disease in the living and in the dead, which he had learned from the same great pathologist. He also taught us much in respect to the physical signs of disease in the thorax, with which we were imperfectly acquainted before; at least I may say this was true as to myself. Indeed I ought to say more, for he aided me very much in regard to the diagnosis of the more obscure diseases of that region, derived from the combination of the physical and rational signs. On emphysema of the lungs he threw, for me, quite a new light.'

W. W. Gerhard was the most distinguished of the American pupils in Paris between 1830 and 1840. When you call to mind the men whom I have mentioned, this may seem a strong statement, but I feel certain that could we take their suffrages they would accord him the place of merit in consequence of the character of his work. Dr. Gerhard was born in Philadelphia in 1809, and was graduated from the University of Pennsylvania in 1831. Early in the year he went to Paris and attached himself to Louis at La Pitié. In one of his letters[1] to his brother, dated January 18, 1832, he says:

'Dr. Louis is delivering an interesting clinic at La Pitié; he is a remarkable man, very different from the physicians of England or America, and remarkable even at Paris by the strict mathematical accuracy with which he arrives at his results; he is not a brilliant man, not of the same grade of intellect as his colleague at La Pitié, Andral.'

[1] I am indebted to members of Dr. Gerhard's family for the letters from which these extracts are taken.

In another letter he gives an account of his day's work :

'The morning from seven to ten is occupied with the visit and clinic at the hospital ; there are several distinct clinics now in actual progress ; each of them has its advantages. I shall vary my attendance at the different hospitals and select those lecturers who are of real merit. At this moment we are following Piorry at the Salpetrière, a very distant hospital, two or three miles from our lodgings ; his patients are all old women, and not interesting. My object in following his course is to obtain some interesting information on the best mode of investigating the diseases of the chest. M. Piorry has devoted special attention to this subject. From Salpetrière we hurry to La Pitié ; we hear a surgical lecture, reach home to breakfast, and then to the school of medicine. The lectures at the school, with a private course of anatomy during the hour of intermission, fill up the remainder of the day until four. Fortunately a private clinic at La Charité introduces me to a set of very interesting cases, especially on pectoral cases. Dr. Dagneau has a class who pay him ten francs a month and enjoy the privilege of examining the patients much more conveniently than is practicable during the morning visit in the midst of a crowd of students. We dine at five-thirty and then lectures again until eight o'clock. Imagine the facilities, the delightful advantage of acquiring positive information, and what is at least as important, of learning the mode of obtaining these positive results. We see and hear the men who are so well known to us in America, learn to form a correct estimate of their relative worth—in short, one of the most striking advantages of a medical visit to Europe is to acquire the sort of liberal professional feeling which is rarely secured by the continued intercourse with the same men, and the unpleasant medical politics which divide the profession in America.'

Evidently Broussais made no special impression on Dr. Gerhard. He says,

'Broussais is the best known, his reputation is universal, and the benefits he has conferred on medicine are immense, but unfortunately he is a wretched lecturer. His own opinions are given in the most awkward,

clumsy manner; the manner and style of lecturing are coarse and vulgar.'

In another letter of February 3, 1832, he tells how he induced Louis to give them private instruction. To his brother he writes:

'I must write you at least a few days before the excitement has passed off: can you imagine how fortunate I am—*devinez si vous pouvez*—two or three days ago, Jackson, Pennock, and myself were talking of hospitals and morbid anatomy, when the idea occurred of attempting the study of pathology in a particular manner. It was this: to obtain the specimens and study them, the authors in our hand, exactly and carefully comparing authorities with the subject before us. We addressed ourselves to two of the *internes* at La Pitié attached to the *salles* of Louis and Andral, and they agree to procure all facilities in their power and communicate their own information for the compensation of 60 francs from each of us; we accordingly visit La Pitié on three afternoons of the week and examine the parts at the hospital, afterwards carrying home such portions as require minute investigation. Our first success in this opening of new sources of instruction emboldened us to attempt something of higher importance. We were all desirous of studying auscultation, of studying it in such a manner as to be sure of our ground on our return, and to be capable of appreciating the advantages of the art. Louis' public instructions were valuable, but his private lessons upon a subject demanding minute and patient inquiry we knew would be infinitely more so. I therefore in the name of my friends addressed him a polite note, accompanied by a handsome pecuniary offer: we did this with little hopes of success, but happily for us he accepted our proposition, and next week we are his private pupils at La Pitié. We are, I believe, the first who have made this arrangement with M. Louis, and you may estimate its importance when I tell you that he is considered in excellence of diagnosis the successor of Laennec. Our advantages for the study of pathology and the diagnosis of diseases of the chest are now superior; they are indeed the very best in the world, and our eagerness to embrace them will, I hope, render

them of real utility; of course they involve an additional expenditure of 400 or 500 fr., but I should be happy to shorten my stay at Paris a month to improve the remainder of my time in this manner, if such were necessary for me. Pennock and myself are very happy to have become intimate with Jackson; he has superior talents, and his excellent education, conducted by his father, unquestionably the first physician in America, has cultivated his mind and developed an ardent attachment to medicine.'

Few American students have occupied their time abroad to greater purpose than Dr. Gerhard. He appears to have been an indefatigable worker, and the papers which he published based upon material collected in Paris are among the most important which we have from his pen. Thus with Pennock he described Asiatic cholera in 1832. Devoting himself particularly to the study of diseases of children, he issued a very interesting paper on small-pox, and two papers of very special value, the first on tuberculous meningitis and the other upon pneumonia in children. Both of these papers mark a distinct point in our knowledge of these two diseases. He is usually accorded the credit of the first accurate clinical study of tuberculous meningitis.

Late in the year 1833 he returned to Philadelphia, and at his suggestion his friends had secured him the appointment as resident physician at the Pennsylvania Hospital, which he took early in 1834. This step indicated how carefully he had weighed the important influence in Louis' career of the years of quiet work at La Charité. At the Pennsylvania Hospital he had an opportunity to study the common continued fever of the country, and determined that it was identical, clinically and anatomically, with the typhoid fever of Louis, and characterized by a special lesion in the glands of Peyer. I do not know exactly how long he remained resident

physician at the Pennsylvania Hospital, but he was soon after appointed one of the physicians at Blockley, and here in 1836 he was able to carry out his most important piece of work. The general opinion prevailed that the fever which Louis described and which had the lesions in the small bowel was only a modification of the ordinary typhus fever which at that time prevailed so extensively, particularly in Great Britain and Ireland. In London, Edinburgh, and Dublin the intestinal lesions were regarded as only accidental, and not indicative of a special affection. Dr. Gerhard knew the typhoid fever of Louis well, and had had an opportunity of studying it again at the Pennsylvania Hospital, so that when the epidemic of typhus fever developed in 1836 he was in a very good position to make an accurate study of the disease. Two hundred and fourteen cases were observed, and as a result of his study he declared positively that the typhus fever, which was similar to the disease which he had also seen in Edinburgh, was a different affection altogether from the typhoid fever with intestinal lesions. These observations, you must remember, were made in 1836, at a time when the greatest confusion existed as to the forms of fever. It took a great many years in Great Britain before the duality of the prevalent fever was recognized, but owing to the influence of Gerhard's paper, and to the accurate knowledge of fever brought to this country by Louis' pupils, the differentiation of the two diseases was here quickly recognized, since, as already mentioned, Bartlett in 1842 considered them apart.

Gerhard's work influenced his Paris friends greatly, and this was strengthened by the papers read before the Society for Medical Observation by George C. Shattuck and Alfred Stillé, of whom the former had had oppor-

tunities of studying typhus fever in Great Britain, while the latter had been one of Gerhard's house physicians in the typhus epidemic at Blockley. Shattuck's paper is published in the *Medical Examiner* for 1840. I have always regretted that Dr. Stillé's paper has never been printed yet. He was kind enough to let me see it, and, as I have mentioned elsewhere, the differential points between typhus and typhoid fever are nowhere more clearly laid down.

The University of Pennsylvania early took advantage of Gerhard's training, and utilized him as clinical lecturer at the Philadelphia Hospital. He soon acquired a special reputation in diseases of the heart and lungs. In 1842 appeared the first edition of his work on Diseases of the Chest, which ran through four editions, and is still a valuable work of reference. One of his fellow students in Paris, Stewardson, has given a very pleasing picture of him as a clinical teacher:

'As a clinical teacher he was remarkably successful and exerted a powerful and commanding influence. Without any pretension to eloquence, he nevertheless riveted the attention of his hearers and stimulated their enthusiasm. Himself deeply interested in his subject, he communicated this interest to his audience by the sheer force of truth. Students saw that truth was his object, not display; the advancement of science, and not the gratification of personal feelings, whether of vanity or ambition; in short, that in his mind, a deep interest in his subject and a thorough conscientiousness in the pursuit of it were the overmastering motives. In an easy and conversational style he presented to his hearers a graphic portraiture of the case before them, bringing into relief its most important symptoms; impressing upon their minds the most striking features in its history; pointing out, by a few clear and practical expressions, the bearing of any particular fact upon interesting medical questions, but avoiding long and laboured arguments, or general disquisitions upon the

nature of diseased action. He neither stimulated the fancy by the flowers of rhetoric, nor amused the intellect with episodes upon theoretical questions, but confined himself to drawing such practical conclusions as were clearly deducible from the facts presented. No man of his day enjoyed so high a reputation as a clinical teacher, and not only did he succeed in an eminent degree in arousing the enthusiasm of students and putting them in sympathy with himself, by infusing into them his own ardour in his favourite study, but he produced an influence upon the profession here which is felt still, which has fostered the establishment of clinical teaching among us, and done much to give it that rank which it now occupies here as a branch of medical instruction.'

Of the work of Louis' other students in this country time would fail me to tell—of the influence of Bowditch, Holmes, and Shattuck in Boston, of Swett, Clark, and others in New York, of Pennock, Stewardson, Stillé in Philadelphia, and of Power in Baltimore. To them all we owe a heavy debt of gratitude. They brought from Paris enthusiasm, faith in the future, faith in the profession of their choice, accurate methods, and a loyal love of truth. Endowed with the spirit and zeal of their master, they carried his great message to the New World; and more than this, touched with those finer qualities which made Louis so lovable, they have become bright ideals for all future generations of American students.

There remain, so far as I know, three only of the Paris students of whom I have spoken, John T. Metcalfe, Meredith Clymer, and your honoured patron, Alfred Stillé. They, too, must soon go the way of all the earth; but among the consolations of old age what greater solace can they feel than that the lives of the men whose fathers and grandfathers they taught are made better by their presence?

WILLIAM PEPPER[1]

In *Rugby Chapel*, that noble poem in memory of his father, Matthew Arnold draws a strong contrast, on the one hand, between the average man, who eddies about, eats and drinks, chatters and loves and hates—and then dies, having striven blindly and achieved nothing; and, on the other, the strong soul tempered with fire, not like the men of the crowd, but fervent, heroic, and good, the helper and friend of mankind. Dr. William Pepper, whose loss we mourn to-day, while not a Thomas Arnold, belonged to this group of strong souls, our leaders and masters, the men who make progress possible.

There are two great types of leaders; one, the great reformer, the dreamer of dreams—with aspirations completely in the van of his generation—lives often in wrath and disputations, passes through fiery ordeals, is misunderstood, and too often despised and rejected by his generation. The other, a very different type, is the leader who sees ahead of his generation, but who has the sense to walk and work in it. While not such a potent element in progress, he lives a happier life, and is more likely to see the fulfilment of his plans. Of this latter type the late Professor of Medicine at the University of Pennsylvania was a notable example—the most notable the profession of this country has offered to the world.

[1] This address was prepared to be delivered at the opening of the session of the Johns Hopkins Medical School, October, 1898; but I was ill at the time.

I

William Pepper began life under conditions which are very often unfavourable to success. His father, a distinguished physician, the professor of medicine in the school in which his son was educated, belonged to a family of position and influence. For the young man there were none of those tempering 'blows of circumstance', no evil star with which to grapple and grow strong. Quite as much grit and a much harder climb are needed to reach distinction from the top as from the bottom of the social scale, and to rise superior to the *res abundans domi* has taxed to the uttermost many young men in this country. We have heard enough of the self-made men, who are always on top; it is time now to encourage in America the young fellow who is unhappily born 'with a silver spoon in his mouth'. Like the young man in the Gospels, he is too apt to turn away sorrowfully from the battle of life, and to fritter his energies in Europe, or to go to the devil in a very ungentlemanly manner, or to become the victim of neurasthenia. To such the career I am about to sketch should prove a stimulus and an encouragement.

At the age of 21, in 1864, the year of his father's death, Pepper graduated from the Medical Department of the University of Pennsylvania, having previously taken the B.A. degree. What now were the influences which sent this youngster bounding up the ladder three rungs at a time? In the first place, the elder Pepper was a clinical physician of exceptional abilities; but more than this, intellectually he was a son of the great Louis, one of that band of much loved American students, whom Louis sent to their homes with high ideals, with good methods of work, and with a devoted

admiration of their chief. The talk at home while young Pepper was a medical student must often have been of the old teacher, of his ways and works, of his noble character and of his loving heart. The father's mental attitude had been moulded finally by Louis, and the son's early work shows deep traces of the same influence. Indeed, all through life the clinical manner and habits of thought of the younger Pepper were much more French than English or German. In this respect he differed widely from his contemporaries, who became dominated by the Vienna and Berlin Schools. Dr. Pepper, sen., died a few months after his son's graduation, leaving him a moderate competency, and the example of a life devoted to all that was highest in our profession. It is interesting to note that the two diseases portrayed most skilfully by Louis, typhoid fever and phthisis, were those which both the elder and the younger Pepper studied with special ardour.

For more than a century the Pennsylvania Hospital has been the nursing mother—the *pia mater*—of the kings of the clinic in Philadelphia, but in the long list of medical officers given in Morton's history of that institution you can find no young man who made his connexion with the hospital so immediately productive as William Pepper. In it I find the second potent factor in his rapid professional development. In the summer following his graduation he served temporarily as apothecary. In 1865 he was elected one of the resident physicians, and had as a colleague his friend, Edward Rhoads. On the completion of his service he was appointed pathologist to the Hospital and curator of the Museum, positions which he held for four years. He immediately threw all his energies into the study of morbid anatomy, and in 1868 was appointed lecturer

on the subject in the University. Making autopsies, working in the Museum, studying tumours and microscopic specimens, his time could not have been more fortunately spent, for in these early years he thus obtained a knowledge of morbid anatomy which stood him in good stead when time became more precious and engagements numerous. Throughout his entire career this work lent accuracy and firmness to his diagnosis. He never forgot the value of morbid anatomy, nor the debt which he owed to it. I have known few practitioners more keen (or more successful) in obtaining permission for autopsies. Very often he would send an especially interesting specimen to my laboratory, knowing that I would gladly get it ready for his clinic. Quite early in my association with him I saw that he had served an apprenticeship in the dead-house. He could come into the clinic and pick up a heart which he had never seen, but only felt and heard, and go at once to the seat of the disease.

The descriptive catalogue of the Pathological Museum at the Pennsylvania Hospital was issued in 1869, and while a large portion was from the pen of Dr. Morton, every page bears witness to the careful and thorough manner with which Dr. Pepper had worked over the specimens. The early volumes of the Transactions of the Pathological Society attest his zeal in this study.

As the third powerful element in his progress I place his association with Dr. John Forsyth Meigs, in the revision of the well-known work, *The Diseases of Children*. The third edition had appeared in 1858. The fourth edition, by Meigs and Pepper, was practically a new work. Dr. Meigs was an exceedingly busy man, and the bulk of the revision fell to his junior. The descriptions of disease were admirable,

the pathology well up to date, and the authors broke away in a remarkable manner from many of the traditions and routines of old-time practice. If you compare Meigs and Pepper of 1870 with the third edition, or with the contemporary books on the same subject, you will see what a radical work it was for that date. To one section of the edition we may turn with special interest, namely, to diseases of the caecum and appendix. Nowhere in literature, I believe, before 1870, is the importance of the appendix so fully recognized, or is there so good a description of the results of perforation. One cannot but regret that no edition of this work appeared after the sixth, in 1877. The experience gained by Pepper, while still a very young man, in the preparation of this work, was of incalculable value. It familiarized him with the literature, gave him an insight into the art of book-making, brought him into close personal contact with a man with remarkable medical instincts, and altogether was a circumstance which, I think, may be justly regarded as one of the three most powerful influences during the formative period of his career. Indeed, in many quarters, Dr. William Pepper, jun., as he used to be called, really never got the credit for the association with Meigs in the work on *Diseases of Children*. For years I had the impression that it was his father who was the joint author of the work; and even quite recently, since Dr. Pepper's death, I heard a man well versed in medical literature and interested in diseases of children, express great surprise that the Pepper of Meigs and Pepper was the late Provost of the University.

In 1870 *The Philadelphia Medical Times* was started, but the health of Edward Rhoads, who had been selected as editor, had failed so rapidly that the opening

of the new enterprise was entrusted to his friend, William Pepper, who brought out the first twelve numbers of the journal, and then transferred the editorship to the late James H. Hutchinson. I have glanced over vol. i, to glean indications of Pepper's early work. Among five or six contributions two are of particular interest, as they indicate the sort of work this young man was doing in clinical medicine. At page 274 is recorded a case of scirrhus of the pylorus with dilatation of the stomach, an ordinary enough case nowadays, but one which has gone into literature and is often quoted on two counts: first, the accurate study of the peristalsis of the stomach-wall, which was visible, and made the subject of very careful electrical experiment; and, secondly, the practical point of using the stomach-tube, at that date a novel procedure, and, so far as I know, not previously practised in America in cases of the kind. The other contribution, still frequently referred to in the literature, on Progressive Muscular Atrophy of the Pseudo-hypertrophic Type, is one of the most exhaustive contributions to the subject made up to that date, and is a model of accurate clinical and anatomical study.

An advertisement in a supplement to one of the numbers gives us an idea of the sort of work he was doing at this time in teaching. In conjunction with H. C. Wood, jun., he announces a course of practical medicine at the Philadelphia Hospital, to extend throughout the months of April, May, and June. They announce that between them they have 175 patients under their care. Dr. Pepper was to meet the class at 8 a.m. on Tuesday, and Dr. Wood at 9.30 a.m. on Friday.

It seems to me that for so young a man, Pepper had a great deal of good sense to have avoided the pitfalls

of medical journalism. He must have seen at an early date that to be successful in it meant practically the sacrifice of everything else.

By the end of December, 1870, young Pepper, then only a little past twenty-seven years of age, already had a well-established reputation as a teacher and worker. I do not know of another instance in the profession in which a man at his time of life had made so favourable a start. From this date on we may divide his life into three periods—to 1881, when he was appointed Provost of the University, his Provostship, 1881-94, and the short period since his resignation from that office.

II

The decade from 1871-80 demonstrated that a man of men, to use a phrase of Milton's, had arisen in the profession in Philadelphia, a man with both '*Geist* and go', one who could not only blow a trumpet-blast loud enough to awaken the slumbering conservatives of his native city, but could command a following which enabled him, in spite of all opposition, to set on foot much-needed reforms. As illustrating his activity during this period, I can allude, and only briefly, to three important pieces of work. The removal of the University to West Philadelphia doubtless made her friends aware of the possibilities of the situation. In the Medical School, then a relatively much more important section, the plans had been organized for well-equipped buildings and laboratories in West Philadelphia. An exceedingly judicious plan, for which I do not know whether Pepper was solely responsible, but one in which he had his whole heart, was the organization of a hospital to be under the control of the faculty and trustees. Blockley was within a stone's throw of the

new buildings of the Medical School, and its rich stores of material were available, but it was a very wise and far-seeing scheme which regarded the clinical equipment as an integral part of a medical school which should be under the immediate supervision of the faculty. For many years it was a hard struggle to make both ends meet, and even when I joined the faculty of the University in 1884 the hospital was constantly in need of funds (and much besides). One thing it never lacked, hopefulness on the part of Dr. Pepper, who never for a moment consented to look at the dark side of the picture, always saw a few years ahead, predicted success in the days when the debt was the greatest; and with many other schemes on hand he never let an opportunity slip of forwarding the interests of that part of the institution which he loved, perhaps, better than any other. In 1881 the Vice-Provost, in an address at the inauguration of Dr. Pepper as Provost, expressed the popular feeling as follows: 'To him who has pleaded for mercy to the helpless sick, as a lover would plead his own cause; who, working with other men of goodwill, took by tacit election the headship among them; who has touched with a master hand the springs of influence—to him public esteem has given the wreath as the moral architect of our Hospital.' It is gratifying to think that he lived to see it placed on a solid basis of success, with the maternity department splendidly organized, the Pepper Clinical Laboratory, which he himself gave in memory of his father, the centre for high-class work, and the new Nurses' Home and the Agnew Wing in full operation.

Were I asked to name the most satisfactory single piece of work in Dr. Pepper's life, I should say un-

hesitatingly that which related to the promotion of higher medical education. This little volume[1] contains two addresses, one delivered October 1, 1877, the other October 2, 1893. They represent a forecast and a retrospect. At the time of the removal of the University to West Philadelphia the University Faculty was a strong one, but it contained a number of men who were saturated with old-time prejudices, and who were bitterly opposed to any change in the methods of medical education. Once before, in 1846, the University had made an attempt to elevate the standard of medical education, but unsuccessfully. In 1871 the Harvard Medical Faculty had been taken in hand and reorganized, so that the example had been set, but there was probably no school in the Union in which the outlook for reform was thought to be less hopeful than at the University. The struggle was a hard one; the brunt of it fell upon the young men, more particularly upon Pepper, who was the very head and front of the new movement. The plan of reorganization was not carried without much bitterness; indeed, it looked at one time as though the faculty would split, as Professor Rogers, who did resign, very nearly carried with him several strong colleagues. As Dr. Pepper says in his second address, speaking of the inauguration of the new system in 1877: 'We thought, too, alas, of the long and painful controversy, lasting almost five years, over the proposition to again elevate our standard of medical education, and of how the end had been attained only at the cost of old friendships and of the allegiance of valued associates, whose convictions remained unchanged as to the injury that would be worked to the

[1] *Higher Medical Education*: Two Addresses, by William Pepper. Lippincott & Co., 1894.

University by the proposed advance.' The movement was immediately successful, and the changes then made were but precursors to other more radical advances. It was always a source of great gratification to Pepper to feel that the plans for which he had worked so hard had been crowned with such success. Years hence these two addresses, with their appendices, will be regarded as perhaps the most valuable single contributions to the literature of the phenomenal educational movement through which we have lived during the last quarter of the nineteenth century.

The third event of which I spoke was the organization of the medical department of the Centennial Exposition of 1876. I only mention it as one which gave him an opportunity to demonstrate how strong were his executive abilities.

In 1881 Pepper was elected Provost of the University of Pennsylvania. The feeling was unanimous that he was the man in whose hands the destiny of the institution would at any rate be safe, but no one could have predicted such a decade of development as took place under his management. The material progress is indicated by an increase in the acreage in West Philadelphia, from fifteen to fifty-two; the number of students increased from 981 to 2,180, and the fees of the students during the same period more than trebled. I do not know that there has been an instance of such remarkable growth in any University in this country, unless it has been in a newly established one, such as the University of Chicago. That the University to-day occupies a position in the very first rank of educational institutions is due to the energy of William Pepper.

Passing without further comment the work of his Provostship, since this has been dwelt upon with great

fullness in various obituary notices, I may here refer to several important undertakings during this period. There had never been published in this country a composite work by native writers, corresponding to the *System of Medicine* by Reynolds or to Ziemssen's *Encyclopaedia*. A circular was issued in November, 1881, to the joint authors, but it was more than three years subsequently before the first volume of the system was issued; the five volumes were then published in rapid succession, the fifth appearing in 1886. While unequal, as all such systems must necessarily be, it remains a great work, and contains articles which have become classical in American literature. It proved to be perhaps the most successful venture ever made in this country by a medical publishing company, and it extended widely the reputation of the editor.

For many years those of us whose work lay in the special field of medicine had felt that a society was needed in which we could meet our fellows in the same line of work. As early as 1881 I had written to Dr. Tyson, shortly after my first visit to Philadelphia, urging the organization of such a body, but it was not until the winter of 1885–6 that the initial steps were taken to form the 'Association of American Physicians'. I remember well in the preliminary meetings how by tacit consent Dr. Pepper assumed the headship, and in formulating the details and in arranging the final organization his executive abilities made the work very easy.

A few years later a much more difficult scheme was engineered by him to a successful issue, in the welding of the various special societies into the Triennial Congress of American Physicians and Surgeons. Much of the success of the first meeting in 1888 was due to the admirable manner in which, as Chairman of the Execu-

tive Committee, he shaped the policy of the organization. One astonishing feature in his character was the intense energy and enthusiasm with which he threw himself into these and similar schemes. Letters of suggestion here, of advice in another quarter, conferences, caucuses, —as if, indeed, he had nothing else on his mind, nothing to do but the business on hand. He always appeared at a meeting prepared, knowing exactly what was needed, and, as I have said, took the headship by tacit consent; and the business was 'put through' in a way not always seen in gatherings of medical men.

For many years Dr. Pepper had advocated a closer union between the United States and the Latin-American republics, the commercial and intellectual relations of which he maintained should be with this country rather than with Europe. He gave practical expression to the conviction by organizing the first Pan-American Medical Congress (of which he was President), and by interesting the governments of the South American States in his Commercial Museum.

Though a chief promoter both of the Association of American Physicians and of the Congress of American Physicians and Surgeons, he was a warm advocate of the claims of the National Association, the meetings of which he very often attended, and in the success of which he was deeply interested. Of late years the extraordinary calls upon his time made attendance upon medical societies very difficult, and more than once he has expressed to me his deep regret that unavoidable engagements either prevented it altogether or made his visits hurried and unsatisfactory.

For some years before his formal resignation of the Provostship, Dr. Pepper had felt that he had done as much as any one man could, and that it was in the

interest of the University that he should give way to some one else. It was his hope, I know, to be able to resign at the end of his ten years' service, but circumstances delayed his action until 1894.

But it was not for rest, or for any warning that he was doing too much, that he asked to be relieved from the cares of the University. Other great schemes had been absorbing his energies. For years he had been impressed with the importance of museums and collections. The Wistar Museum of Anatomy had been a source of great satisfaction. In 1891 he undertook the establishment of the Archaeological and Palaeontological Museums. The strong personal interest which he took in Archaeology encouraged his friends to hope that he had at last found a hobby which might divert him from more trying duties. He could talk on the outlook in Babylonia, button-holing some local Dives, and impressing him with the needs of their last University expedition, as though he had no other interest in life. To the next man it was of the wonderful 'finds' in Florida or Peru, and of their great importance in the history of the early races of this continent. It was extraordinary how he could warm up in talking of these and allied subjects, and his quick, receptive mind and retentive memory enabled him to grasp the important points in the problems to be attacked.

For a quarter of a century he devoted his marvellous energies to the University of Pennsylvania, believing that in serving her he could best serve his city and State. The last years of his life were given to promote the material and intellectual welfare of his native town. The success of the museum schemes gave courage to his ambition, and he began the organization of the Commercial and Economic Museum, of which he was

president at the time of his death. His desire was to see about the University of Pennsylvania a great group of museums which would not only illustrate the past and present history of man in all his relations, but which would reflect the commercial and economic aspect of his present activities, and particularly one in which the raw and manufactured products of the world would be represented, a place in which the business man of Pennsylvania could be put in touch with producer or consumer in any country. An immense scheme, involving millions of dollars, it has advanced to a stage in which not only is success assured, but in which people are beginning to appreciate what a boon has been bestowed on a great manufacturing city.

And then, as if such a colossal enterprise were not sufficient to keep him busy, he undertook the organization of a Free Library for Philadelphia. It was no doubt through his influence that his uncle had given a quarter of a million dollars for the purpose. This library was very near to his heart, and its remarkable success in so short a time was, he has told me, a source of the keenest pride. Not long before his death he secured a bequest of a million dollars for a public art gallery.

From this hurried sketch you may get an idea of the ceaseless energy and activity of his life, but it would be very incomplete without some specific reference to his work as a practising physician. The medical profession in every country has produced men of affairs of the first rank, men who have risen high in the councils of nations, but with scarcely an exception the practice of medicine has not been compatible with such duties. So absorbing are the cares of the general practitioner or the successful consultant, that he has but little time

to mingle in outside affairs, and the few who enter public life do so with many backward glances at the consulting-room, and with well-grounded forebodings of disaster to professional work. But Dr. Pepper maintained to the end the closest relations with the profession, both as a consultant and a teacher. To me one of the most remarkable features of his life is the conscientiousness with which he attended to a large and exacting practice. That amid such multifarious cares and duties he should have been able to maintain an undiminished activity in his calling is perhaps the greatest tribute to his genius. As a teacher his forte was in the amphitheatre, where he displayed precision in diagnosis, great lucidity in the presentation of a complicated case, and a judicious and thorough knowledge of the resources of our art.

Naturally, as he became more and more involved in outside affairs, he became less able to contribute important papers to medical literature, but a glance through the files of the *American Journal of the Medical Sciences*, and the *Transactions of the Association of American Physicians*, shows during the past ten years a large number of very valuable contributions, many of them in collaboration with younger men. The journal literature of the same period is full of more ephemeral contributions in the form of clinical lectures.

I have already referred to several important early contributions. Among others of special importance I may mention his studies on pernicious anaemia, the first made, I believe, by any physician in this country, and his contributions to Addison's disease. In tuberculosis he always took a very warm interest. For many years he was supposed to be a victim of pulmonary tuberculosis, and indeed the autopsy showed that he

had a healed patch of the disease in one lung. In lectures and in numerous general articles he dwelt upon the great importance of the disease. One of his most interesting contributions was on the local treatment of cavities in the lungs. He also made an extensive investigation into the subject of pulmonary tuberculosis in the State of Pennsylvania. Diseases of the stomach and intestines were always favourite subjects of study. His papers on appendicitis were of special value, particularly those upon the relapsing form of the disease. His work on pulmonary tuberculosis early led him to make careful inquiries into the climate of different sections of the country, and few members of the profession had a more accurate knowledge of the subject. He was a strong believer in the value of the mineral springs of this country, and some years ago, with Dr. Daland, he collected an enormous amount of material which was the basis for his Report on the Mineral Springs of America. In 1893 he edited the *American Text-Book of Medicine*, which had a large sale, and served to keep his name prominently before the profession.

III

As a man the late Provost formed a most interesting study, and as I had such a warm appreciation of his character I may, in the privilege of friendship, say a few words of a more personal nature.

I remember as though it were yesterday the occasion of our first meeting in 1881. I had come to Philadelphia to look over the museums and hospitals. I was much impressed with his cordiality, the ease of his manner, the freshness and elasticity of his mind. He was just starting to his lecture, and I was delighted to accompany him. For years I had not listened to a clinic so well

and so artistically planned, and conducted with such readiness. I did not see him again until I became his colleague. In five years of pleasant fellowship in the Faculty of the University of Pennsylvania I remember to have been seriously vexed with him but once, and that was on account of my confrère, Howard Kelly. A number of us had backed that Kensington colt—as we called him in those days—I forget for what appointment. I only remember that I was very keen about it at the time. At the last moment Pepper entered a dark horse, who won easily, to our great chagrin. To my warm expostulations he listened with great patience, but after about five minutes of that delightful persuasiveness which was so freely at his command, I left him, not only with all bitterness assuaged, but almost sorry that I had not supported his candidate. In Athens he would have been called a sophist, and I do not deny that he could, when the occasion demanded, play old Belial, and make the worse appear the better cause, to perplex and darken maturest counsel—but how artistically he could do it!

His faults? I am not here either to portray or to defend them.

> They say, best men are moulded out of faults:
> And, for the most, become much and more the better
> For being a little bad.

He was human, and to those of a man he added the failings of a college president. To some sedate Philadelphians he seemed a modern Machiavelli, but a man engaged in vast schemes with many clashing interests is sure to be misunderstood, and to arouse sharp hostility in many quarters. The average citizen, if he does not understand, is very apt to dread or to dislike a new Ulysses.

In many ways the American is the modern Greek, particularly in that power of thinking and acting, which was the strongest Hellenic characteristic. Born and bred in one of the most conservative of cities, surrounded by men who loved the old order, and who hated change, or even the suggestion of it, Pepper displayed from the outset an adaptability and flexibility truly Grecian. He was pre-eminently a man of felicities and facilities, to use a somewhat flash but most suitable phrase. Matthew Arnold's comment upon the happy and gracious flexibility which was so incarnate in Pericles has often occurred to me in thinking of the character of the late Provost: 'Lucidity of thought, clearness and propriety of language, freedom from prejudice, freedom from stiffness, openness of mind, and amiability of manner.' There was another Grecian feature which must not be lost sight of. You remember in the *Timaeus* how the Egyptian Priest said to Solon: 'You Hellenes are never anything but children; there is not an old man among you . . . in mind you are all young.' To the very last there was a youthful hopefulness and buoyancy of spirits about Pepper that supported him in many trials and troubles. I never knew him despondent or despairing. If things looked dark, if plans and projects on which his heart was set had miscarried, he met the disappointment with a smile, which robbed it of half its power. The persistency of this buoyant hopefulness often wore out the most obstinate opposition; in fact, it was irresistible. Nor was it the hopefulness which we condemn as visionary, but a resourceful hopefulness, based on confidence in himself, and, most valuable quality of all, capable of inspiring confidence in others.

Nor must I neglect to bear testimony to his inherent

kindliness of heart. Busy and prosperous, and so much absorbed in large projects and with the care of lives very important in a community, a great physician is apt to slight the calls of the poor and needy, whose lives are of importance only to themselves. Necessarily his contact with such is in the hospital wards. The family physician has not a monopoly of the charity work. The consultant has often to take a share, and with his large and varied associations, Pepper had an unusual number of calls upon his time and sympathy, as well as upon his purse, and to all he responded with a gracious liberality. Only a year or two ago an instance came to my notice which illustrated his kindness. From one of the lower counties of Maryland one of those sad wrecks which 'the little red school-house' is apt to make of women had been under Pepper's care at the University Hospital. She had improved very much, had been able to return to work, but after a time had again broken down. She had written to him for advice. In reply he urged her to put herself under my care at the Johns Hopkins Hospital, which was much more accessible, and he offered to give her a note of introduction to me. I was much impressed by the kindly tone of the letter, which was written with his own hand (an unusual event in his later years), and full of consideration and sympathy.

Not endowed, it was supposed, with a very strong constitution, the wonder is that he should have been able to do so much and to live so long. The 'bridle of Theages', an inherited or acquired delicateness which has often proved in its possessor a blessing to the race, was no check-rein to him; and I have heard him say that he preferred the life of a salmon to that of the turtle. Though premature in one sense, his death came after

he had seen fulfilled the desire of his eyes, and to the rich life which he had lived the future could have added but little, though doubtless his restless spirit would have driven him into fresh fields. The reformation of medical education, the reorganization of the University of Pennsylvania, the establishment of a great Commercial Museum and a Free Library—these and a score of minor plans he had either seen completed or well under way. Surely if ever a man could sing a *Nunc Dimittis* it was William Pepper! But as no man liveth, so no man dieth to himself, and we may mourn with those who shared his inner life, and who so generously gave so much of it to us of the profession and to the public. For them we feel his loss to be irreparable, his death to be premature. For them we could have wished an extension of his time to the Psalmist's limit.

I have no desire to criticize the method of his life. Exceptional men cannot be judged by ordinary standards. The stress and strain of thirty years told severely on his arteries, and for two or three years there had been unmistakable warnings in attacks of angina pectoris. He kept at work with vigour unabated until the spring, when he had signs of dilatation of the heart, with bronchitis and dyspnoea. The last time I saw him, in May, 1898, I think, he was in bed, improving rapidly, he said, and very cheerful, talking much of his plans, particularly of the Commercial Museum and of the Library. He spoke of a proposed visit to the Pacific Coast, and of the good it was sure to do him. Then came the sad announcement of his death in California—a shock to all his friends, since, with the discretion which we doctors often exercise, the secret of his serious attacks had been well kept. I may be permitted to quote one or two extracts from

a letter from his physician, who was with him at the time:

'He died at eight in the evening with a copy of *Treasure Island* in his hands. At seven I had left him gazing upon Mount Diabolo, shadowed in the gathering darkness. I was called at eight and found him in the attitude and with the expression of *angor animi*, from which he never roused. He had suffered a few months before with cardiac dilatation; at the time of his death he was recovering the lost compensation, and appeared on the clear road to recovery. He had said a few days before "the battle has been won". Throughout his illness he exhibited the most perfect disposition and the greatest patience and forbearance. . . . The fatal attack was, I think, about the seventh, extending over a period of three years; the last previous attack was in April, at the time he was lecturing upon angina pectoris. He knew that the end must come some day, but he did not expect it so soon. I have never seen so beautiful a nature in sickness; his conduct and disposition were worthy of Marcus Aurelius.'

With such a book as *Treasure Island* in his hand, we can imagine that the great Enchanter of the Pacific had filled his mind with the possibilities of peace and quiet (so long denied him)—possibilities turned instantly to realities with the summons to the peace and quiet of an eternal rest. Some lines of the same writer express both the spirit in which William Pepper utilized his time in the service of his fellow men, and the chief lesson of his life to us who survive:

> Contend, my soul, for moments and for hours;
> Each is with service pregnant, each reclaimed
> Is as a Kingdom conquered, where to reign.

ALFRED STILLÉ[1]

I DOUBT not that every Fellow of this College had a feeling of thankfulness, mingled with a sort of pride, that Alfred Stillé was spared so long to grace and adorn our Society. His venerable presence was itself a sort of benediction; his culture a refining influence; and there was about him 'a certain niceness of nature, an honest haughtiness and self-esteem', which well became his position and his years.

The College has had Fellows more distinguished—men who have filled a wider space in our annals, and who have been more closely identified with her history—but it would be hard to name a Fellow in the past half-century who was more deeply interested in her welfare, more appreciative of her needs, or one upon whom was a richer anointing of the spirit of the fathers.

I feel it a special privilege to be allowed to act as the mouthpiece of my colleagues in expressing our sense of the value of his work and the lessons of his life. The physician of the last century, whose 'floruit' came in the fourth, fifth, and sixth decades, is of all men the most to be envied. Coming out of the wilderness in which we had wandered for two thousand years, he entered the promised land, and, under the

[1] Read at the meeting of the College of Physicians of Philadelphia, April 2, 1902. Reprinted from the *University of Pennsylvania Medical Bulletin*, June, 1902.

leadership of Laennec and Louis, of Skoda and of Virchow, he saw the heathen dispossessed, and the profession at last enter upon a heritage of scientific medicine.

I

Born in 1815, Dr. Stillé began his life-work with the generation which saw the new pathology and the new clinical methods. To this accident of the time of birth were added favouring social and local surroundings. Like Sir Thomas Browne, he could 'lift up one hand to heaven that he was born of honest parents, and that modesty, humility, patience, and veracity lay in the same egg and came into the world with him'. With Milton, he could feel that his endowments were happily not the worse for forty degrees of northern latitude. Among his papers are several interesting autobiographical fragments relating to this period. After joining in the 'conic section' rebellion at Yale, which led to the retirement of one-half of the class, he seems to have had for a time a leaning toward the law.

'During the years of probation,' he says, 'I tested the strength of my partiality for a medical career by some medical reading, including Bell's *Anatomy* and Bichat's *General Anatomy*, and attending the anatomical instruction at the Jefferson Medical College. In this last I was joined by my friend Mandeville, who was at that time already a student of law. I was induced to pursue these anatomical studies at the Jefferson College by Dr. George McClellan, who was then attending my sister Sarah for a tedious ailment, and also by the reputation of the professor of anatomy in that institution, Dr. Granville Sharpe Pattison. He was certainly a most eloquent teacher, and he made the dry subject interesting by mixing with pure anatomy a good deal of physiology and surgery, and even a dash of poetry. I shall never forget his lecture upon the

skull, in which he recited with admirable feeling the famous lines of Byron beginning, "Is this a place where a god might dwell?" Indeed, the charm of Pattison's lectures was his enthusiasm, tempered and guided by cultivation. His voice was flexible and sonorous, though not loud, and his manner intensely earnest, but never violent. While I attended his lectures I also began the study of practical anatomy in the new and admirably constructed dissecting-room of the same college, and pursued it with much enthusiasm in company with Mandeville.'

The best of luck awaited him when, in 1835-6, he became house physician at Blockley, under W. W. Gerhard, a clinical teacher of the very first rank, and fresh from the wards of the great French physician, Louis.

He was much indebted, too, to Pennock, of whom he has left the following appreciative sketch:

'Meanwhile, I studied physical exploration and diagnosis with Dr. Pennock, who, besides having been associated with Dr. Gerhard in his fever studies, also devoted himself specially to diseases of the heart. I had assisted him in or been present at some of the experiments on sheep which he performed to demonstrate the mechanism of the heart's action, and now at the hospital I was instructed by him in the clinical diagnosis of heart disease by physical methods. He was a man who united with a rare enthusiasm in the study of the heart's functions and diseases—and, indeed, in whatever he undertook—a transparent honesty and innocency of character, and a generous ardour of benevolence, that made him beloved as well as admired. He was in nearly all respects in contrast with his friend Gerhard, who was frequently satirical, devoid of sentiment or imagination, and equally so of strong personal attachments. No doubt Gerhard was the more intellectual man, but Pennock was the nobler of the two. His chief contribution to medical literature, besides his collaboration with Gerhard in the essay on *Typhus*, was an edition of Hope's *Treatise on the Heart*, to which he added

much that was valuable, including the experiments performed by Moore and himself. It is remarkable that both of these men were arrested in their professional career not by death, but disease; from about 1850 Gerhard suffered from disease within the cranium, which, although it did not render him a paralytic or an imbecile, extinguished every spark of his ambition, and caused a permanent halt in his acquisition of knowledge. He repeated over and over again his old lectures, but added to them nothing new. In 1863 he did, indeed, record his observations of epidemic meningitis; but this was, I think, the only occasion of his revival.'

In remarks made at the dinner given on the occasion of his retirement from the Chair of Medicine, Dr. Stillé referred to his two teachers in the following words:

'While still a medical student two of my fellow townsmen returned from abroad glowing with the fire they had caught in Paris, the then acknowledged centre of medical science. Gerhard and Pennock were the apostles of the school of observation, under whose preaching I became a zealous convert. As soon as it was possible, I hastened to the enchanted scene of their European labours.'

I have written much and talked more on the subject of Louis and his band of American pupils, of whom Stillé was a good representative. The mantle of Laennec fell upon Louis, who seems to have had in singular measure the gift of inspiring enthusiasm in his students and a touching personal devotion. No European teacher has ever appreciated more highly his transatlantic pupils, and not one has ever had a more distinguished band of followers. Oliver Wendell Holmes said that he had learned three things in Paris: 'Not to take authority when I can have facts, not to guess when I can know, and not to think a man must take physic because he is sick.' It seems to me that this group of young fellows brought back from Paris, first, an appreciation of the

value of method and accuracy in the study of the phenomena of disease; secondly, a profound, and at the time a much needed, distrust of drugs; and, thirdly, a Gallic refinement and culture which stamped them, one and all, as unusual men. Let me name the list over as given to me by Stillé himself:

'From Boston: James Jackson, jun., H. I. Bowditch, O. W. Holmes, George C. Shattuck, jun., John C. Warren (then past middle age), John Mason Warren, and John D. Fisher. From Philadelphia: George W. Norris, William W. Gerhard, Caspar W. Pennock, Thomas Stewardson, Alfred Stillé, Thomas D. Mütter, E. Campbell Stewart, Charles Bell Gibson, John B. Biddle, David H. Tucker. Baltimore: William Power (see biography of Charles Frick, in Gross's *Lives*). Charleston: G. S. Gibbes, Peter C. Gaillard, Peyre Porcher. Virginia: J. L. Cabell, L. S. Joynes, Randolph. New York: John A. Swett, Abraham Dubois, Alonzo Clark, Charles L. Mitchell, Punnett, Charles D. Smith, Valentine Mott, sen. In addition, Edward Peace, Meredith Clymer, William P. Johnston, W. S. W. Ruschenberger, and John T. Metcalfe.'

There were many others, of course—some before Louis' day, as Samuel G. Morton, who was Laennec's most distinguished American pupil, and some of those mentioned, as Meredith Clymer (*ultimus Romanorum*[1]) and Metcalfe, just gone, who did not come so directly under Louis' influence, but were pupils of Chomel and Andral.

II

Method and accuracy were from the first characteristic of Dr. Stillé's work. He played an interesting part in that splendid contribution of American medicine to the differentiation of typhus and typhoid fever. I

[1] Died April 20, 1902.

will let him tell the story in his own words. In a manuscript he says:

'The year 1836 is memorable for an epidemic of typhus (t. petechialis) which prevailed in the district of the city which is the usual seat of epidemics caused or aggravated by crowding, viz. south of Spruce and between Fourth and Tenth streets. A great many of the poor creatures living in that overcrowded region, and who were attacked with typhus, were brought to the Philadelphia Hospital, where I had charge of one of the wards assigned to them. I had the great good fortune to study these cases under Dr. Gerhard. His permanent reputation rests upon the papers published by him in Hays's *Journal*, in which he fully established the essential differences between this disease and typhoid fever. All the original material he obtained in this country for determining the symptomatology of typhus was gathered by him during this epidemic; but his first studies of the disease had been made in Great Britain. The contrasted picture of typhoid fever was composed of the features he had become familiar with while studying that disease as a favoured pupil of Louis, in Paris, so that he may be said to have been the first to meet the two diseases face to face with a full acquaintance with one of them and a daily increasing knowledge of the other. On a small scale I went through the same experience, for I had grown familiar with typhoid fever while following Gerhard's clinical instructions in the Pennsylvania Hospital the year before, and at every step of my study of typhus in the wards and post-mortem revealed new contrasts between the two diseases, so that I felt surprised that the British physicians should have continued to confound them. I was very diligent in making clinical notes and dissections, spending many hours every day in the presence of the disease. I, however, escaped its contagion, while several others of the resident physicians suffered attacks of it, one of which, I think, ended fatally. I look upon that arduous and even dangerous experience as one of my most valuable clinical lessons.'

In the draft of a letter dated February, 1862, found among his papers, entitled *Refutation of A. F. Stewart's*

Claims about Typhus and Typhoid Fevers, there is the following account:

'It is known that the question had already been conclusively solved by Drs. Pennock and Gerhard, of Philadelphia, in 1837, whose essay upon it was published in the February and August numbers for that year of the *American Journal of the Medical Sciences*, republished in the *Dublin Journal of Medical Science*, September, 1837, p. 148, analysed in the *London Medico-Chirurgical Review* for October, 1837, p. 553, and translated in a Parisian medical journal, *l'Expérience*, in 1838. The writer of the present communication, having had the advantage of observing the typhus epidemic in the Blockley Hospital under the physicians just named, afterward made a special study of typhoid fever in the wards of M. Louis, in Paris, and had opportunities of observing typhus with Vulpes in Naples, Tweedie in London, Alison in Edinburgh, and Graves in Dublin. The results of these observations were contained in a paper, of which Valleix speaks as follows: "In an unpublished memoir of Dr. Stillé, an *interne* of Dr. Gerhard during the prevalence of the epidemic in Philadelphia, which was read before the Medical Society of Observation (September 14 and 28, 1838), and which we have before us, the two diseases are compared, symptom by symptom and lesion by lesion; and, apart from the phenomena of fever common to all febrile affections, the opposite of what is observed in the one is sure to be presented in the other" (*Arch. gen.*, February, 1839, p. 213). Among other conclusions reached by Valleix is the following: "English and American typhus is a different disease from typhoid fever." A few months later (*Arch. gen.*, October, 1839, p. 25 and p. 129) the same physician published an analysis of thirteen cases of typhus observed in London by Dr. G. C. Shattuck, of Boston, fully confirming the conclusion just stated. A paper founded on the same cases is also contained in the *Philadelphia Medical Examiner* for February, 1840, p. 133. It was after the whole of these publications—viz. in April, 1840—that Dr. Stewart first communicated his observations to the Parisian Medical Society, and they were not published until October of the same year. His apparent want of candour, there-

fore, in the paragraph above quoted from his communication to the *Times and Gazette* is, for his own sake, very much to be regretted.'

I am fortunately able to show you the manuscript of Dr. Stillé's paper, which, with that of Shattuck, made a strong impression on the French physicians, who still clung to the view that there was but one disease. It is a pity that this admirable paper has never been printed. A casual glance over the headings will give you an idea of the fullness and accuracy with which these able young fellows had worked out the differences between these two great diseases. Gerhard and Pennock, Stillé and Shattuck, appear to have been the first to fully grasp their essential clinical distinctions, and to appreciate their merit one has only to read the British writings on fever at this period. Some years later A. F. Stewart did good work in the same line, and later still Jenner made his important study; but that in the first edition of Bartlett on *Fevers*, 1842, the two diseases should have been considered apart is the best testimony to the rapidity with which the new views were received in this country.

Between two and three years of study in Europe gave Dr. Stillé a fine training for his life-work. Returning to Philadelphia, he began practice, wrote for the journals, taught students, and gradually there came to him reputation and recognition. After lecturing on pathology and the practice of medicine in the Philadelphia Association for Medical Instruction, he was elected, in 1854, to the Chair of Practice in the Pennsylvania Medical College. In 1864 he succeeded Dr. Pepper (primus) in the Chair of Medicine at the University of Pennsylvania. While always a student, he was no hermit, but from the start took a deep interest

in the general welfare of the profession. He was the first Secretary of the American Medical Association, and President in 1867. The local societies recognized his work and worth, and he became President of the Pathological and of the County Medical Societies, and in 1885 he took the Chair of our ancient and honourable body. He was from the outset of his career a strong advocate for higher medical education, and from 1846—the date of his first address on the subject—to 1897—the date of his last—he pleaded for better preliminary training and for longer sessions. No one rejoiced more in the new departure of the University in 1876, and he was a consistent advocate of advanced methods of teaching.

Dr. Stillé's medical writings show on every page the influence of his great master. His first important work, *The Elements of General Pathology*, 1848, was based on the modern researches, and every chapter echoed with his favourite motto, 'Tota ars medica est in observationibus.' I must quote one sentence from the *Introductory Essay on Medical Truth*:

'But we assert that there is a genius, not a speculative, not a poetical, not a mere fantastic faculty, but a practical genius, which is, to say the least, a far more rare endowment than that just mentioned; "a power which is capable of penetrating into all things *within our reach and knowledge* and of distinguishing their essential differences." It creates nothing, it does not even invent anything; it only *sees things as they are* and discovers truth in what it sees; for the truth, as we are told by Rousseau, is in things and not in our minds, and the less of ourselves we introduce into our judgements the nearer we shall approach to truth. Such was the genius of Hippocrates, of Sydenham, of Morgagni, of Haller, of Laennec, of Abercrombie, of Hunter, of Bichat, of Sir Astley Cooper; such is that of Andral, of Chomel, of Louis, of Cruveilhier, of Brodie, of

Graves. These men saw relations among the phenomena of disease which were invisible to less gifted men; and having seen them by virtue of their genius they did not stop there and build up a theory upon them, assuming them to be true, but immediately applied themselves to discover *whether they had seen correctly*; they tested their inspirations by observation and experiment, and when they found them unable to bear these tests they rejected them as delusions, as idle dreams not even worth remembering; but when, on the other hand, they found them confirmed, they gave credit, not to the original penetration which had guessed at the truth, but to the series of facts which had established it.'

Apart from numerous smaller articles in the journals, there are two important monographs by Dr. Stillé—one on *Cerebro-spinal Meningitis* and the other on *Cholera*. In addition, two minor studies were on *Dysentery*, in the publications of the United States Sanitary Commission, and on *Erysipelas*. The work on cerebro-spinal fever is a model of accurate, systematic study based on a large series of cases seen in the Philadelphia Hospital, and upon an exhaustive analysis of the literature. The work on cholera is of the same kind. To a generation of lesser writers they have served as unfailing sources of trustworthy information.

Estimated by bulk, the most important of Dr. Stillé's works are the *Materia Medica and Therapeutics* and the *National Dispensatory*. It was always a mystery to me how a man with his training and type of mind could have undertaken such colossal and, one would have thought, uncongenial tasks. He was not so deeply imbued with scepticism as some of his contemporaries. Of him it could scarcely have been said, as of Jacob Bigelow by Professor Peabody, that his

qualifications to teach therapeutics were on a par with those of a learned Mohammedan to teach Christian exegesis. Dr. Stillé's attitude on the question of therapeutics was very sane. In illustration, let me quote one or two sentences.

'Of therapeutics we may say what has been said of the legislative powers of a State. We cannot assign definite and immutable limits to them or lay down inflexible rules for their use. The treatment of every case of sickness must be determined ultimately for and by itself, tentatively by skilled men and as their practical sagacity may determine, while they bear in mind that the virtues of a medicine depend less upon its intrinsic properties and powers than on the sagacity of the physician who administers it, just as the efficiency of firearms depends less upon the explosives and the missile they contain than on the judgement and accuracy of aim of the man who discharges them.'

He had grasped the great truth that the art as an art has its true and only foundation in clinical medicine. In his Valedictory Address, 1884, he said:

'I have devoted whatever knowledge and skill I possessed to the simple, if difficult, task of knowing and curing diseases. I have striven, in season and perhaps out of season, to impress upon you that medicine is, first of all, an art, but an art that can only be successfully practised when the physician is able to recognize the individual diseases he must meet with in practice, and distinguish from one another those which are similar in appearance, but unlike in nature.'

Again:

'But every observant practitioner knows that he treats patients rather than diseases. He does not regard the former as the chemist does his crucibles, retorts, and test-glasses, which have no reaction upon their contents, but he knows that every substance taken into the body acts upon it and is itself acted upon by it, and in innumerable modes and degrees, according to the existing condition of the body and the quantity, combination, and form of administration of the medicine;

so that there is some ground for the sarcastic comment that "the art of medicine consists in introducing a body of which we know little into another of which we know still less."'

And yet again:

'It is quite as necessary for the physician to know when to abstain from the use of medicine as it is for him to prescribe when medication is necessary; that he must, as far as possible, see the end of a disease from its beginning; that he must never forget that medical art has a far higher range and aim than the prescription of drugs, or even of food and hygienic means; and that when neither of these avails to ward off the fatal ending, it is still no small portion of his art to rid his patient's path of thorns if he cannot make it bloom with roses.'

III

On the roll of our Fellows will be found the names of at least half a dozen distinguished bibliophiles to whom we are deeply indebted, as they have kept alive in this society the interest of the average Fellow in books, and have made possible a great library. Dr. Stillé was not only a book-lover, but a discriminating and learned student. Our shelves testify not less to his liberality than to his taste for rare and important monographs, while the Stillé Library of the University of Pennsylvania will remain a monument to his love of the literature and history of our profession.

But it was neither as a teacher nor as a writer that Dr. Alfred Stillé's influence was most deeply felt. In a long career several generations of students and physicians were influenced by an earnest, real man, whose life was true and sincere, whose ideals were lofty, and whose devotion to duty came from pure and unselfish motives. 'A life of probity, a high sense of honour, uniform courtesy,' as Dr. Da Costa remarked, endeared

him to the profession, and crowned his declining years with all the things which should accompany old age. Nothing in his life, which was one calling for courage of a high order, became him more than the graceful way in which he grew old. So far as I know, the chapter on the old man in the profession has not yet been written. To-day, as in the sixteenth century, the bitter *mot* of Rabelais is true: 'There be more old drunkards than old physicians.' Take the list of Fellows of our College, look over the names and dates of graduation of the practitioners of this city, and the men above seventy years of age form, indeed, a small remnant. All the more reason that we should cherish and reverence them. It interested me greatly in Dr. Stillé, and I only knew him after he had passed his seventieth year, to note the keenness of his mind on all questions relating to medicine. He had none of those unpleasant senile vagaries, the chief characteristic of which is an intense passion for opposition to everything that is new. He had that delightful equanimity and serenity of mind which is one of the most blessed accompaniments of old age. He had none of those irritating features of the old doctor, who, having crawled out of the stream about his fortieth year, sits on the bank, croaking of misfortunes to come, and, with less truth than tongue, lamenting the days that have gone and the men of the past. He was not like the sage of Agrigentum, of whom Matthew Arnold sings:

Whose mind was fed on other food, was train'd
By other rules than are in vogue to-day;
Whose habit of thought is fix'd, who will not change,
But, in a world he loves not, must subsist
In ceaseless opposition.

From this unhappy attitude of mind he was saved by a serene faith in the future of the profession. Naturally

he did not approve of much that is unpleasant in our modern ways. In some of his last letters there is a touch of the old vigour with which he was wont to rap the pretensions of the ignorant or the half-educated. In a letter to me dated February 7, 1900, he writes:

'I never supposed the Louis methods would be accepted by the profession generally. They were too laborious, and they gratified too little the thirst for popular applause and personal exaltation that contaminates so many, even men of merit. Not even their adoption and illustration by a certain number of physicians who drew their inspiration from the Parisian fount has sufficed to prevent their being overwhelmed by the deluge of German speculation on pathology and therapeutics.'

And again, in the last letter I had from him, June 27, 1900, referring to Bartlett's sketch of Hippocrates, which he says:

'I read and enjoyed, as I do whatever helps to strip Truth of her gauds and present her in her native simplicity. It seems inseparable from all progress in knowledge that it shall not be administered in too concentrated a form, lest it produce repugnance and indigestion. This has been found necessary in religion, and how could philosophy escape it? Our medical principles and doctrines are found insipid by the vulgar unless they are confectioned to suit the popular palate, with a large seasoning of human invention.'

Not the least important service of Dr. Stillé was his persistent emphasis on lofty professional ideals, of which his own life was in reality the best exemplar; for, to use his own words, he was loyal to science and truth, loyal to his art, loyal to the history and traditions of his profession, loyal to the principles and precepts which the peculiar relations of medical men to one another, to the public, and to their patients impose upon them. On the occasion of the dinner given to him in 1884,

Dr. Stillé told an interesting incident, which I quote here as his *credo*:

'During one of my summer holidays, while abroad, it was my lot—less vulgar then than now—to climb the Alps and observe the expedients used by the mountaineers in ascending the icy peaks. I noted the laborious industry with which they cut for themselves footholds on the slippery steep, and so mounted slowly to their destination. This method profoundly impressed me at the time, and I said to myself, "Surely in such wise must one hew his way to fame and fortune; and whether the point to be attained be the highest peak of all, or only some humbler hill-top by the way, it was clear that whatever else might win, *improbus labor omnia vincit*." What seemed revealed to me then among the sublime solitudes of nature has been echoed by a thousand voices along the whole pathway of my life. It came to me also, like a voice from the tomb, in the words of an old family motto, *Innocenter*, *patienter*, *constanter*, and it was repeated in the history of all the men I have known who secured for themselves a steadfast place in their day and generation. I cannot doubt that in the bosom of every one who hears my voice there is felt a silent attestation of its truth. It has been the keynote of my teaching as well as the guide of my actions, and, therefore, how little soever of the good that has been attributed to me by your partial voices may in reality be mine, I owe it all to the lessons of steady industry and undaunted perseverance that I learned from the Alpine mountaineer.'

Among his papers is a most interesting and touching letter of advice to his brother Moreton, whose brilliant career was cut short in his thirty-third year. I cannot refrain from quoting the concluding sentences, which express admirably his relations to his students and his general attitude toward the profession he loved:

'It would be useless for me at this time to go into a more detailed development of the system of instruction I wish you to follow. It will be gradually unfolded as you advance, and may be modified by circumstances;

and in all your intercourse with me I wish you to look upon me merely as an older student than yourself, who, having trod the same path, has a greater knowledge of its difficulties, and pleasures, and dangers; who will be proud to be your guide, and glory in inspiring you with an ardent love of the profession you have chosen. I feel deeply impressed with the belief that your character and talents are such as eminently to qualify you for attaining distinction as a medical philosopher and gaining the respect and affection of those among your fellow men who may require your professional services. I will not conceal from you that there is much before you to make even a strong resolution waver. You must toil for years to fit you for the guardianship of the health and lives of men; and yet again you must toil, long and diligently, to reap the reward of your labour. But if you have a spark of benevolence in your heart; if you have that only ambition which is not a vice—to excel others in doing good; if you think that the gratitude and the affection of those you may relieve from sickness is a sufficient recompense for much self-denial and self-sacrifice, then you will not be disappointed. You will be richly repaid for your days of labour and your nights of watching; you will learn to cultivate a spirit of charity toward others, and of justice toward yourself, which will make your station in life respectable and your social and domestic relations hallowed by the light of an unbroken peace.'

Hear the conclusion of the whole matter—the lesson of a long and good life. It is contained in a sentence of his Valedictory Address: '*Only two things are essential, to live uprightly and to be wisely industrious.*'

SIR THOMAS BROWNE [1]

As a boy it was my good fortune to come under the influence of a parish priest of the Gilbert White type, who followed the seasons of Nature no less ardently than those of the Church, and whose excursions into science had brought him into contact with physic and physicians. Father Johnson, as his friends loved to call him, founder and Warden of the Trinity College School, near Toronto, illustrated that angelical conjunction (to use Cotton Mather's words) of medicine and divinity more common in the sixteenth and seventeenth centuries than in the nineteenth. An earnest student of Sir Thomas Browne, particularly of the *Religio Medici*, he often read to us extracts in illustration of the beauty of the English language, or he would entertain us with some of the author's quaint conceits, such as the man without a navel (Adam), or that woman was the rib and crooked piece of man. The copy which I hold in my hand (J. T. Fields's edition of 1862), my companion ever since my schooldays, is the most precious book in my library. I mention these circumstances in extenuation of an enthusiasm which has enabled me to make this almost complete collection of the editions of his works I show you this evening, knowing full well the compassionate feeling with which the bibliomaniac is regarded by his saner colleagues.

[1] An Address delivered at the Physical Society, Guy's Hospital, October 12, 1905. Reprinted from *The Library*, January, 1906.

I—The Man

The little Thomas was happy in his entrance upon the stage, October 19, 1605. Among multiplied acknowledgements, he could lift up one hand to Heaven (as he says) that he was born of honest parents, 'that modesty, humility, patience, and veracity lay in the same egg, and came into the world' with him. Of his father, a London merchant, but little is known. There is at Devonshire House a family picture which shows him to have been a man of fine presence, looking not unworthy of the future philosopher, a child of three or four years, seated on his mother's knee. She married a second time, Sir Thomas Dutton, a man of wealth and position, who gave his stepson every advantage of education and travel. We lack accurate information of the early years—of the schooldays at Winchester, of his life at Broadgate Hall, now Pembroke College, Oxford, and of the influences which induced him to study medicine. Possibly he got his inspiration from the Regius Professor of Medicine, the elder Clayton, the Master of Broadgate Hall and afterwards of Pembroke College. That he was a distinguished undergraduate is shown in his selection at the end of the first year in residence to deliver an oration at the opening of Pembroke College. Possibly between the years 1626, when he took the B.A., and 1629, when he commenced M.A., he may have been engaged in the study of medicine; but Mr. Charles Williams, of Norwich, who is perhaps more familiar than any one living with the history of our author, does not think it likely that he began until he went abroad. In these years he could at least have 'entered upon the physic line' and could have proceeded to the M.B. He was too early to participate in the revival of science in

Oxford, but even after that had occurred Sydenham flung the cruel reproach at his Alma Mater that he would as soon send a man to her to learn shoemaking as practical physic. It was possible, of course, to pick up a little knowledge of medicine from the local practitioners and from the Physic Garden, together with the lectures of the Regius Professor, who, as far as we know, had not at any rate the awkward failing of his more distinguished son, who could not look upon blood without fainting, and in consequence had to hand over his anatomy lectures to a deputy.

Clayton's studies and work would naturally be of a somewhat mixed character, and at that period even many of those whose chief business was theology were interested in natural philosophy, of which medicine formed an important part. Burton refers to an address delivered about this time by Clayton dealing with the mutual relations of mind and body. The *Anatomy of Melancholy*, which appeared in 1621, must have proved a stimulating bonne-bouche for the Oxford men of the day, and I like to think of the eagerness with which so ardent a student as Browne of Pembroke would have pounced on the second and enlarged edition which appeared in 1624. He may, indeed, have been a friend of Burton, or he may have formed one of a group of undergraduates to watch Democritus Junior leaning over the bridge and laughing at the bargees as they swore at each other. It is stated, I know not on what authority, that Browne practised in Oxford for a time.

After a visit to Ireland with his stepfather he took the grand tour—France, Italy, and Holland—spending two years in study. Of his Continental trip our knowledge is very meagre. He went to Montpellier, still famous,

but failing, where he probably listened to the teaching of Rivière, whose *Praxis* was for years the leading textbook in Europe—thence to Padua, where he must have heard the celebrated Sanctorius of the Medicina Statica—then on to Leyden, just rising into prominence, where it is said he took his doctor's degree in 1633. Of this, however, there is no certainty. A few years ago I looked through the register of that famous University, but failed to find his name. At the end of two years' travel he may have had cobwebs in his pocket, and the Leyden degree was expensive, as that quaint old contemporary of Browne, the Rev. John Ward, of Stratford-on-Avon, tells us (*Diary*): 'Mr. Burnet had a letter out of the Low Countries of the charge of a doctor's degree, which is at Leyden about £16, besides feasting the professors; at Angers in France, not above £9, and feasting not necessary neither.' No doubt the young Englishman got of the best that there was in the teaching of the day, and from the *Religio* one learns that he developed from it an extraordinary breadth of culture, and a charity not always granted to travellers. He pierced beneath the shell of nationalism into the heart of the people among whom he lived, feeling at home everywhere and in every clime; hence the charity, rare in a Protestant, expressed so beautifully in the lines: 'I can dispense with my hat at the sight of a cross, but scarce with the thought of my Saviour.'

He must have made good use of his exceptional opportunities; as he was able to boast, in a humble way it is true, that he understood six languages.

Returning to England in 1634 he settled at Shibden Dale, close to Halifax, not, as Mr. Charles Williams has pointed out, to practise his profession, but to recruit his health, somewhat impaired by shipwreck and disease.

Here, in Upper Shibden Hall, he wrote the *Religio Medici*, the book by which to-day his memory is kept green among us. In his travels he had doubtless made many observations on men, and in his reading had culled many useful memoranda. He makes it quite clear—and is anxious to do so—that the book was written while he was very young. He says: 'My life is a miracle of thirty years.' 'I have not seen one revolution of Saturn.' 'My pulse hath not beat thirty years.' Indeed, he seems to be of Plato's opinion that the pace of life slackens after this date, and there is a note of sadness in his comment, that while the radical humour may contain sufficient oil for seventy, 'in some it gives no light past thirty,' and he adds that those dying at this age should not complain of immaturity. In the quiet Yorkshire valley, with 'leisurable hours for his private exercise and satisfaction', the manuscript was completed, 'with,' as he says, 'such disadvantages that (I protest) from the first setting pen to paper I had not the assistance of any good book.' 'Communicated to one it became common to many,' and at last in 1642, seven years after its completion, reached the press in a depraved form.

In 1637, at the solicitation of friends, Browne moved to Norwich, with which city, so far as we know, he had had no previous connexion. At that date the East Anglian capital had not become famous in the annals of medicine. True, she had given Caius to the profession, but he had only practised there for a short time and does not seem to have had any special influence on her destinies. Sir Thomas Browne may be said to be the first of the long list of worthies who have in the past two and a half centuries made Norwich famous among the provincial towns of the kingdom. Here for forty-five years he lived the quiet, uneventful life of a student-

Sir Thomas Browne

practitioner, absorbed, like a sensible man, in his family, his friends, his studies, and his patients. It is a life of singular happiness to contemplate. In 1641 he married Dorothy Mileham, 'a lady of such a symmetrical proportion to her worthy husband—that they seemed to come together by a kind of natural magnetism.' In the *Religio* he had said some hard things of the gentle goddess and had expressed himself very strongly against Nature's method for the propagation of the race. He believed, with Milton, that the world should have been populated 'without feminine', and in almost identical words they wish that some way less trivial and vulgar had been found to generate mankind. Dame Dorothy proved a good wife, a fruitful branch, bearing ten children. We have a pleasant picture of her in her letters to her boys and to her daughter-in-law, in a spelling suggestive of Pitman's phonetics. She seems to have had in full measure the simple piety and the tender affection mentioned on her monument in St. Peter's Church. The domestic correspondence (Wilkin's edition of the *Works*) gives interesting glimpses of the family life, the lights and shadows of a cultured English home. The two boys were all that their father could have wished. Edward, the elder, had a distinguished career, following his father's footsteps in the profession and reaching the dignity of the Presidency of the Royal College of Physicians. Inheriting his father's tastes, as the letters between them prove, his wide interests in natural history and archaeology are shown in his well-known book of *Travels*, and I am fortunate in possessing a copy of the *Hydriotaphia* with his autograph.

Edward's son, the 'Tommy' of the letters, the delight of his grandfather, also became a physician, and practised with his father. He died in 1710 in

rather unfortunate circumstances, and with him the male line of Sir Thomas ended. Of the younger son we have, in the letters, a charming picture—a brave sailor-lad with many of his father's tastes, who served with great distinction in the Dutch wars, in which he met (it is supposed) a sailor's death. The eldest daughter married Henry Fairfax, and through their daughter, who married the Earl of Buchan, there are to-day among the Buchans and Erskines the only existing representatives of Sir Thomas.

The waves and storms of the Civil War scarcely reached the quiet Norwich home. Browne was a staunch Royalist, and his name occurs among the citizens who in 1643 refused to contribute to a fund for the recapture of the town of Newcastle. It is astonishing how few references occur in his writings to the national troubles, which must have tried his heart sorely. In the preface to the *Religio* he gives vent to his feelings, lamenting not only the universal tyranny of the Press, but the defamation of the name of his Majesty, the degradation of Parliament, and the writings of both 'depravedly, anticipatively, counterfeitedly, imprinted'. In one of the letters he speaks of the execution of Charles I as 'horrid murther', and in another he calls Cromwell a usurper. In civil wars physicians of all men suffer least, as the services of able men are needed by both parties, and time and again it has happened that an even-balanced soul, such as our author, has passed quietly through terrible trials, doing the day's work with closed lips. Corresponding with the most active decades of his life, in which his three important works were issued, one might have expected to find in them reference to the Civil War, or, at least, echoes of the great change wrought by the

Commonwealth, but, like Fox, in whose writings the same silence has been noticed, whatever may have been his feelings, he preserved a discreet silence. His own rule of life, no doubt, is expressed in the advice to his son: 'Times look troublesome, but you have an honest and peaceable profession which may employ you, and discretion to guide your words and actions.'

Busy with his professional work, interested in natural history, in archaeology, and in literature, with a wide circle of scientific friends and correspondents, the glimpses of Browne's life, which we have from the letters, are singularly attractive. He adopted an admirable plan in the education of his children, sending them abroad, and urging them to form early habits of independence. His younger boy, Thomas, he sent at the age of fourteen to France, alone, and he remarks in one of his letters to him: 'He that hath learnt not in France travelleth in vain.' Everywhere in the correspondence with his children there is evidence of good, practical sense. He tells one of the boys to 'cast off *pudor rusticus*, and to have a handsome garb of his body.' Even the daughters were taken to France. In his souvenir of Sir Thomas Browne, Mr. Charles Williams has given an illustration of his house, a fine old building which was unfortunately torn down some years ago, though the handsome mantelpiece has been preserved.

An interesting contemporary account has been left by Evelyn, who paid a visit to Sir Thomas in 1673. He says:

'. . . the whole house being a paradise and a cabinet of rarities, and that of the best collections, especially medails, books, plants, and natural things. Amongst other curiosities, Sir Thomas had a collection of the eggs of all the foule and birds he could procure, that

country, especially the promintory of Norfolck, being frequented, as he said, by several kinds which seldom or never go further into the land, as cranes, storkes, eagles, and a variety of other foule.'

After Dr. Edward Browne was established in London, the letters show the keen interest Sir Thomas took in the scientific work of the day. Writing of his son's lecture on anatomy at the Chirurgical Hall, he warns him that he would have more spectators than auditors, and after that first day, as the lecture was in Latin, 'very many will not be earnest to come here-after.' He evidently takes the greatest interest in his son's progress, and constantly gives him suggestions with reference to new points that are coming up in the literature. Here and there are references to important medical cases, and comments upon modes of treatment. It is interesting to note the prevalence of agues, even of the severe haemorrhagic types, and his use of Peruvian bark. In one of the letters a remarkable case of pneumothorax is described: 'A young woman who had a julking and fluctuation in her chest so that it might be heard by standers-by.' Evidently he had a large and extensive practice in the Eastern Counties, and there are numerous references to the local physicians. There is a poem extolling his skill in the despaired-of case of Mrs. E. S., three or four of the lines of which are worth quoting:

> He came, saw, cur'd! Could Caesar's self do more;
> Galen, Hippocrates, London's four-score
> Of ffamous Colledge . . . had these heard him read
> His lecture on this Skeliton, half dead;
> And seen his modest eye search every part,
> Judging, not seeing.

The correspondence with his son is kept up to the time of his death. Only part of the letters appear in

Wilkin's *Life*, and there are many extant worthy of publication.

In 1671 he was knighted by Charles II. In 1664 he was made an honorary Fellow of the Royal College of Physicians, with which, through his son, he had close affiliations. His name does not appear in the roll of the Royal Society, with the spirit and objects of which he must yet have had the warmest sympathy. He was in correspondence with many of the leading men of the day—Evelyn, Grew, Elias Ashmole, Dugdale, Paston, Aubrey, and others. The letters deal with a remarkable variety of subjects—natural history, botany, chemistry, magic and archaeology, &c. The *Pseudodoxia Epidemica* (1646) extended his reputation among all classes and helped to bring him into close relationship with the virtuosi of the period. There is in the Bodleian a delightful letter from Mr. Henry Bates, a wit of the court, a few extracts from which will give you an idea of the extravagant admiration excited by his writings:

'Sir,—Amongst those great and due acknowledgements this horizon owes you for imparting your sublime solid phansie to them in that incomparable piece of invention and judgement, R. M. gives mee leave, sir, here at last to tender my share, which I wish I could make proportionable to the value I deservedly sett upon it, for truly, sir, ever since I had the happiness to know your religion I have religiously honoured you; hug'd your Minerva in my bosome, and voted it my *vade mecum*. . . . I am of that opinion still, that next the *Legenda Dei*, it is the master piece of Christendome; and though I have met sometimes with some *omnes sic ego vero non sic* men, prejudicating pates, who bogled at shadowes in 't, and carpt at atoms, and have so strappadoed me into impatience with their senseless censures, yet this still satisfied my zeal toward it, when I found *non intelligunt* was the nurse of theire *vituperant*, and they onely stumbled for want of a lanthorne.'[1]

[1] Wilkin vol. i, p. 253.

While interested actively in medicine, Browne does not seem to have been on intimate terms with his great contemporaries—Harvey, Sydenham, or Glisson—though he mentions them, and always with respect. He was a prudent, prosperous man, generous to his children and to his friends. He subscribed liberally to his old school at Winchester, to the rebuilding of the Library of Trinity College, Cambridge, and to the repairs at Christ Church, Oxford. A life placid, uneventful, and easy, without stress or strain, happy in his friends, his family, and his work, he expressed in it that harmony of the inner and of the outer man which it is the aim of all true philosophy to attain, and which he inculcated so nobly and in such noble words in the *Religio Medici* and in the *Christian Morals*.

A description of him given by his friend, the Rev. John Whitefoot, is worth quoting:

'He was never seen to be transported with mirth or dejected with sadness; always cheerful but rarely merry, at any sensible rate; seldom heard to break a jest, and when he did he would be apt to blush at the levity of it. His gravity was natural, without affectation.'

The end came unexpectedly in his seventy-seventh year, after a sharp attack of colic, on his birthday, October 19, 1682—a curious possibility of which he speaks in the *Letter to a Friend*:

'But in persons who outlive many years, and when there are no less than 365 days to determine their lives every year—that the first day should make the last, that the tail of the snake should return into its mouth precisely at that time, and they should wind up upon the day of their nativity—is, indeed, a remarkable coincidence, which, though astrology hath taken witty pains to solve, yet hath it been very wary in making predictions of it.'

Religio,
Medici.
Printed for Andrew Crooke. 1642.

There are three good portraits of Sir Thomas; one in the College of Physicians, London, which is the best known and has been often reproduced, and from which is taken the frontispiece in Greenhill's edition of the *Religio Medici*; a second is in the Bodleian, and this also has frequently been reproduced; the third is in the vestry of St. Peter's Mancroft, Norwich. Through the kindness of Mr. Charles Williams, it is here reproduced. In many ways it is the most pleasing of the three, and Browne looks in it a younger man, closer to the days of the *Religio*. There is a fourth picture, the frontispiece to the fifth edition of the *Pseudodoxia*, but it is so unlike the others that I doubt very much if it could have been Sir Thomas. If it was, he must have suffered from the artist, as did Milton, whose picture in the frontispiece to the *Poems*, 1645, is a base caricature; but Browne has not had the satisfaction of Milton's joke and happy revenge.

II—The Book

As a book the *Religio Medici* has had an interesting history. Written at 'leisurable hours and for his private exercise and satisfaction', it circulated in manuscript among friends, 'and was by transcription successively corrupted, until it arrived in a most depraved copy at the press'. Two surreptitious editions were issued by Andrew Crooke in 1642 (face p. 259), both in small octavo, with an engraved frontispiece by Marshall representing a man falling from a rock (the earth) into the sea of eternity, but caught by a hand issuing from the clouds, under which is the legend, *A Coelo Salus*.

Johnson suggests that the author may not have been ignorant of Crooke's design, but was very willing to let a tentative edition be issued—'a stratagem by which an author panting for fame, and yet afraid of seeming to challenge it, may at once gratify his vanity and preserve the appearance of modesty'.

There are at least six manuscripts of the *Religio* in existence, all presenting minor differences, which bear out the author's contention that by transcription they had become depraved. One in the Wilkin collection, in the Castle Museum, Norwich, is in the author's handwriting. Had Browne been party to an innocent fraud, he would scarcely have allowed Crooke to issue within a year a second imperfect edition—not simply a second impression, as the two differ in the size and number of the pages, and present also minor differences in the text. The authorized edition appeared in the following year by the same publisher and with the same frontispiece, with the following words at the foot of the plate: 'A true and full copy of that which was most imperfectly and surreptitiously printed before under the name of *Religio Medici*' (face p. 260). It was issued anonymously, with a preface, signed 'A. B.'; 'To such as have or shall peruse the observations upon a former corrupt copy of this Booke.' A curious incident here links together two men, types of the intellectual movement of their generation—both students, both mystics—the one a quiet observer of nature, an antiquary, and a physician; the other a restless spirit, a bold buccaneer, a politician, a philosopher, and an amateur physician. Sir Kenelm Digby, committed to Winchester House by the Parliamentarians, had heard favourably from the Earl of Dorset of the *Religio Medici*. Though late in the day, 'the magnetic

A true and full coppy of that which was most imperfectly and Surreptitiously printed before under the name of Religio Medici.

Printed for Andrew Crooke 1643.

motion,' as he says, 'was impatience to have the booke in his hands,' so he sent at once to St. Paul's churchyard for it. He was in bed when it came.

'This good natur'd creature I could easily perswade to be my bedfellow and to wake me as long as I had any edge to entertain myselfe with the delights I sucked in from so noble a conversation. And truly I closed not my eyes till I had enricht myselfe with (or at least exactly surveyed) all the treasures that are lapt up in the folds of those new sheets.'

Sir Kenelm holds the record for reading in bed; not only did he read the *Religio* through, but he wrote *Observations* upon it the same night in the form of a letter to his friend, which extends to three-fourths of the size of the *Religio* itself. As Johnson remarks, he 'returned his judgement of it not in the form of a letter but of a book'. He dates it at the end 'the 22nd (I think I may say the 23rd, for I am sure it is morning and I think it is day) of December, 1642.' Johnson says that its principal claim to admiration is that it was written within twenty-four hours, of which part was spent in procuring Browne's book and part in reading it. Sir Kenelm was a remarkable man, but in connexion with his statements it may be well to remember the reputation he had among his contemporaries, Stubbs calling him 'the Pliny of our age for lying'. However this may be, his criticisms of the work are exceedingly interesting and often just. This little booklet of Sir Kenelm has floated down the stream of literature, reappearing at intervals attached to editions of the *Religio*, while his weightier tomes are deep in the ooze at the bottom.

The *Religio Medici* became popular with remarkable rapidity. As Johnson remarks, 'It excited attention

by the novelty of paradoxes, the dignity of sentiment, the quick succession of images, the multitude of abstrusive allusions, subtility of disquisition, and the strength of language.' A Cambridge student, Merryweather, travelling in Europe, translated it into Latin, and it was published in 1644 by Hackius at Leyden in a very neat volume. A second impression appeared in the same year, and also a Paris edition, a reprint of the Leyden. The continental scholars were a good deal puzzled, and not altogether certain of the orthodoxy of the work. Merryweather, in a very interesting letter (1649) says that he had some difficulty in getting a printer at Leyden. Salmasius, to whom Haye, a book merchant, took it for approbation, said 'that there was in it many things well said, but that it contained also many exorbitant conceptions in religion and would probably find much frowning entertainment, especially amongst the ministers'. Two other printers also refused it. The most interesting continental criticism is by that distinguished member of the profession, Gui Patin, professor in the Paris Faculty of Medicine. In a letter to Charles Spon of Lyons, dated Paris, October 21, 1644, he mentions having received a little book called the *Religio Medici*, written by an Englishman, 'a very mystical book containing strange and ravishing thoughts.' In a letter, dated 1645, he says, 'the book is in high credit here; the author has wit, and there are abundance of fine things in the book. He is a humorist whose thoughts are very agreeable, but who, in my opinion, is to seek for a master in religion may in the end find none.' Patin thought the author in a parlous state, and as he was still alive he might grow worse as well as better. Evidently, however, the work became a favourite one with him,

as in letters of 1650-3-7 he refers to it again in different editions. It is remarkable that he nowhere mentions the author by name, but subsequently, when Edward Browne was a student in Paris, Patin sends kindly greetings to his father.

Much discussion occurred on the Continent as to the orthodoxy of the *Religio*. It is no slight compliment to the author that he should have been by one claimed as a Catholic, by another denounced as an Atheist, while a member of the Society of Friends saw in him a likely convert. The book was placed on the 'Index'. In England, with the exception of Digby's *Observations*, there were no adverse criticisms of any note. Alexander Ross, that interesting old Southampton schoolmaster, who seems always to have been ready for an intellectual tilt, wrote a criticism entitled *Medicus Medicatus, or the Physician's Religion cured by a Lenitive or Gentle Potion.*

In England there were two reprints in 1645, and it appeared again in the years 1656, 1659, 1669, 1672, and in 1682, the year of Browne's death. A comparison of the early editions shows that all have the same frontispiece and are, with slight variations, reprints of that of 1643. The work also began to be reprinted with the *Pseudodoxia Epidemica* (third edition, 1659). The Latin editions followed each other rapidly. As I mentioned, it first appeared at Leyden in 1644, and was reprinted the same year there and in Paris; then in 1650 in Leyden again, in 1652 in Strassburg, and in the same place in 1665 and 1667. The most important of these editions was that of Strassburg, 1652, with elaborate notes by Moltkius, of which Gui Patin speaks as 'miserable examples of pedantry', and indeed stigmatizes the commentator as a fool. The Dutch translation

appeared in 1655 and a French in 1668, so that altogether during the author's lifetime there were at least twenty editions of the work.

In the seventeenth century there were in all twenty-two editions. In the eighteenth century there were four English editions, one Latin, and one German. Then a long interval of seventy-seven years elapsed, until in 1831 Thomas Chapman, a young Exeter College man, brought out a neat little edition, my own copy of which is made precious by many marginal notes by S. T. Coleridge, who was one of the earliest and most critical among the students of Sir Thomas. In the same year the first American edition was published, edited by the Rev. Alexander Young, of Boston. In 1838 appeared an excellent edition by J. A. St. John, 'traveller, linguist, author, and editor,' and in 1844 Longmans' edition by John Peace, the librarian of the City Library, Bristol. This edition was republished in America by the house of Lea & Blanchard[1], Philadelphia, the only occasion, I believe, on which the *Religio* has been issued by a firm of medical publishers. In 1845 appeared Pickering's beautiful edition, edited, with many original notes, by the Rev. Henry Gardiner, in many ways the most choice of nineteenth-century issues. In 1862 James Ticknor Fields, the well-known Boston scholar and publisher, brought out a very handsome edition, of which, for the first time in the history of the book, an *édition de luxe* was printed on larger paper. In 1869 appeared Sampson Low & Co.'s edition by Willis Bund; and in 1878 Rivingtons' edition edited by W. P. Smith. Then in 1881 there came what must always remain the standard edition, edited by

[1] They did not issue an edition in 1848, as is stated by Greenhill on the authority of J. T. Fields.

Pseudodoxia Epidemica:

OR,

ENQUIRIES

INTO

Very many received

TENENTS,

And commonly presumed

TRUTHS.

By THOMAS BROVVNE Dr. of Physick.

IUL. SCALIG.

Ex Libris colligere quæ prodiderunt Authores longè est periculosissimum; Rerum ipsarum cognitio vera è rebus ipsis est.

LONDON,

Printed by *T. H.* for *Edward Dod*, and are to be sold in *Ivie Lane*. 1646.

Dr. Greenhill for the Golden Treasury Series, and reprinted repeatedly by Macmillan & Co. To his task Dr. Greenhill brought not only a genuine love of Sir Thomas Browne, but the accuracy of an earnest, painstaking scholar. Since the year 1881 a dozen or more editions have appeared, of which I may mention the excellent one by Dr. Lloyd Roberts, of Manchester. I may finish this dry summary by noting the contrast between the little parchment-covered surreptitious edition of 1642 and the sumptuous folio of the Vale Press. In all, including those which have appeared with the collected works, there have been about fifty-five editions. Browne states that the work had also been translated into High Dutch and into Italian, but I can find no record of these editions, nor of a German translation, 1680, mentioned by Watt.

Space will allow only a brief reference to Browne's other writings. *Pseudodoxia Epidemica: or, Enquiries into very many received Tenents and commonly presumed Truths*, appeared in 1646 in a small folio. In extent this is by far the most pretentious of Browne's works. It forms an extraordinary collection of old wives' fables and popular beliefs in every department of human knowledge, dealt with from the standpoint of the science of that day. In a way it is a strong protest against general credulity and inexactness of statement, and a plea for greater accuracy in the observation of facts and in the recording of them. Walter Pater has drawn attention to the striking resemblance between Browne's chapter on the sources of Error and Bacon's doctrine of the Idola—shams which men fall down and worship. He discusses cleverly the use of doubts; but, as Pater remarks, 'Browne was himself a rather lively example of entertainments of the Idols of the Cave—Idola

Specus—and, like Boyle, Digby, and others, he could not quite free himself from the shackles of alchemy and a hankering for the philosopher's stone.' The work was very popular, and extended the reputation of the author very widely. Indeed, in 1646 Browne was not known at large as the author of the *Religio*, as his name had not appeared on the title-page of any edition issued at that date. The *Pseudodoxia* was frequently reprinted, a sixth edition being published in 1672, and it appeared in French both in France and in Holland.

Equalling in popularity among certain people the *Religio*, certainly next to it in importance, is the remarkable essay known as *Hydriotaphia—Urne-Buriall: or, A Discourse of the Sepulchrall Urnes lately found in Norfolk* (1658). Printed with it is *The Garden of Cyrus*, a learned discourse on gardens of all forms in all ages. Naturally, when an unusual number of funeral urns were found at Walsingham, they were brought to the notice of Browne, the leading antiquary of the county. Instead of writing a learned disquisition upon their date—he thought them Roman, they were in reality Saxon—with accurate measurements and a catalogue of the bones, he touches upon the whole incident very lightly, but, using it as a text, breaks out into a noble and inspiring prose poem, a meditation upon mortality and the last sad rites of all nations in all times, with learned comments on modes of sepulchre, illustrated with much antiquarian and historical lore. Running through the work is an appropriate note of melancholy at the sad fate which awaits the great majority of us, upon whom 'the iniquity of oblivion must blindly scatter her poppy'. 'The greater part must be content to be as though they had not been, to be found in the register of God, not in the record of man.'

HYDRIOTAPHIA,
URNE-BURIALL,

OR,

A Diſcourſe of the Sepulchrall Urnes lately found in

NORFOLK.

Together with

The Garden of *CYRUS,*

OR THE

Quincunciall, Lozenge, or Net-work Plantations of the Ancients, Artificially, Naturally, Myſtically Conſidered.

With Sundry Obſervations.

By *Thomas Browne* D. of Phyſick.

LONDON,

Printed for *Hen. Brome,* at the Signe of the Gun in *Ivy-lane.* 1658.

H. 22

A LETTER TO A FRIEND, Upon occasion of the DEATH OF HIS Intimate Friend.

By the Learned

Sir *THOMAS BROWN*, Knight,

Doctor of Physick, late of *Norwich.*

LONDON:

Printed for *Charles Brome* at the *Gun* at the West-End of S. *Paul's* Church-yard. 1690.

Nowhere in his writings does the prose flow with a more majestic roll. Take, for example, this one thought:

'If the nearness of our last necessity brought a nearer conformity unto it, there were a happiness in hoary hairs and no calamity in half senses. But the long habit of living indisposeth us for dying, when avarice makes us the sport of death, when even David grew politically cruel, and Solomon could hardly be said to be the wisest of men. But many are too early old and before the days of age. Adversity stretcheth our days, misery makes Alcemena's nights, and time hath no wings unto it.'

Closely connected in sentiment with the *Urn-Burial* is the thin folio pamphlet—the rarest of all Browne's works, printed posthumously in 1690—*A Letter to a Friend upon Occasion of the Death of his Intimate Friend.* It is a splendid dissertation on death and modes of dying, and is a unique study of the slow progress to the grave of a consumptive. It is written in his most picturesque and characteristic vein, with such a charm of diction that some critics have given it the place of honour among his works. Pater, in most enthusiastic terms, speaks of it with the *Urn-Burial* as 'the best justification of Browne's literary reputation'.

The tender sympathy with the poor relics of humanity which Browne expresses so beautifully in these two meditations has not been meted to his own. 'Who knows the fate of his bones or how often he is to be buried?' he asks. In 1840, while workmen were repairing the chancel of St. Peter Mancroft, the coffin of Sir Thomas was accidentally opened, and one of the workmen took the skull, which afterwards came into the possession of Dr. Edward Lubbock, who deposited it in the Museum of the Norfolk and Norwich Infirmary.

When I first saw it there in 1872 there was on it a printed slip with these lines from the *Hydriotaphia*: 'To be knaved out of our graves, to have our skulls made drinking-bowls, and our bones turned into pipes, to delight and sport our enemies, are tragical abominations escaped in burning burials.' The skull has been carefully described by Mr. Charles Williams, to whom I am indebted for the loan of photographs.

In addition to the *Letter to a Friend*, there are three posthumous works, *Certain Miscellany Tracts* (1684), edited by Archbishop Tenison, and *Posthumous Works* (1712), containing chiefly papers of antiquarian interest. In the same year, 1712, appeared the *Christian Morals*, edited by Archdeacon Jeffrey of Norwich, from a manuscript found among Browne's papers. Probably a work of his later life, it forms a series of ethical fragments in a rich and stately prose which, in places, presents a striking parallelism to passages in the Hebrew poetry. The work is usually printed with the *Religio*, to which in reality it forms a supplement.

Of the collected editions of Browne's works, the first, a fine folio, appeared in 1686. In 1836, Simon Wilkin, himself a Norwich man, edited the works with the devotion of an ardent lover of his old townsman, and with the critical accuracy of a scholar. All students of Sir Thomas remain under a lasting debt to Mr. Wilkin, and it is pleasant to know, that through the kindness of his daughter-in-law, Mrs. Wilkin, of Sidmouth, a Sir Thomas Browne Library has been founded in connexion with the Castle Museum, Norwich, in which Mr. Simon Wilkin's collections have been placed.

III—Appreciation

Critics from Johnson to Walter Pater have put on record their estimate of Browne and of his place in literature. Among these for keenness of appreciation Pater takes the first rank. Lamb and Coleridge dearly loved the old Norwich physician, in whom they found a kindred spirit. In America the New England writers, Ticknor, Fields, Holmes, and Lowell, were ardent students of his works. Lowell in particular is fond of apt quotations from him, and in one place speaks of him as 'our most imaginative mind since Shakespeare'. But no one has put so briefly and so clearly the strong characters of our author as the French critic, Taine:

'Let us conceive a kindred spirit to Shakespeare's, a scholar and an observer instead of an actor and a poet, who in place of creating is occupied in comprehending, but who, like Shakespeare, applies himself to living things, penetrates their internal structure, puts himself in communication with their actual laws, imprints in himself fervently and scrupulously the smallest details of their figure; who at the same time extends his penetrating surmises beyond the region of observation, discerns behind visible phenomena a world obscure yet sublime, and trembles with a kind of veneration before the vast, indistinct, but populous abyss on whose surface our little universe hangs quivering. Such a one is Sir Thomas Browne, a naturalist, a philosopher, a scholar, a physician, and a moralist, almost the last of the generation which produced Jeremy Taylor and Shakespeare. No thinker bears stronger witness to the wandering and inventive curiosity of the age. No writer has better displayed the brilliant and sombre imagination of the North. No one has spoken with a more elegant emotion of death, the vast night of forgetfulness, of the all-devouring pit of human vanity which tries to create an immortality out of ephemeral glory or sculptured stones. No one has revealed in more glowing and original expressions the poetic sap which flows through all the minds of the age.'

The growing popularity of Browne's writings testifies to the assured position he holds, if not in the hearts of the many, at least in the hearts of that saving remnant which in each generation hands on the best traditions of our literature. We, who are members of his profession, may take a special pride in him. Among physicians, or teachers of physic, there is, perhaps, but one name in the very first rank. Rabelais stands apart with the kings and queens of literature. Among the princes of the blood there are differences of opinion as to rank, but Sir Thomas Browne, Holmes, and John Brown of Edinburgh, form a group together high in the circle. Of the three, two were general practitioners; Oliver Wendell Holmes only in the early part of his life, and for forty years a teacher of anatomy; but all three have far closer ties with us than Goldsmith, Smollett, or Keats, whose medical affiliations were titular rather than practical.

Burton, Browne, and Fuller have much in common—a rare quaintness, a love of odd conceits, and the faculty of apt illustrations drawn from out-of-the-way sources. Like Montaigne's—Burton's even more—Browne's bookishness is of a delightful kind, and yet, as he maintains, his best matter is not picked from the leaves of any author, but bred among the 'weeds and tares' of his own brain. In his style there is a lack of what the moderns call technique, but how pleasant it is to follow his thoughts, rippling like a burn, not the stilted formality of the technical artist in words, the cadencies of whose precise and mechanical expressions pall on the ear.

As has been remarked, the *Religio Medici* is a *tour de force*, an attempt to combine daring scepticism with humble faith in the Christian religion. Sir Thomas confesses himself to be 'naturally inclined to that which

misguided zeal terms superstition'. He 'cannot hear the Ave Maria bell without an elevation'. He has no prejudices in religion, but subscribes himself a loyal son of the Church of England. In clear language he says, 'In brief, where the Scripture is silent the Church is my text; where that speaks it is but my comment. When there is a joint silence of both, I borrow not the rules of my religion from Rome or Geneva, but from the dictates of my own reason.' He is hard on the controversialist in religion—'every man is not a proper champion for truth, nor fit to take up the gauntlet in the cause of verity', &c. While he disclaims any 'taint or tincture' of heresy, he confesses to a number of heretical hopes, such as the ultimate salvation of the race, and the efficacy of prayers for the dead. He freely criticizes certain seeming absurdities in the Bible narrative. His travels have made him cosmopolitan and free from all national prejudices.

'I feel not in myself those common antipathies that I can discover in others, those national repugnancies do not touch me, nor do I behold with prejudice the French, Italian, Spaniard, or Dutch; but where I find their actions in balance with my countrymen's, I honour, love, and embrace them in the same degree. I was born in the eighth climate, but seem for to be framed and constellated unto all. I am no plant that will not prosper out of a garden; all places, all airs, make unto me one country; I am in England, everywhere, and under any meridian.'

Only the 'fool multitude' that chooses by show he holds up to derision as 'that numerous piece of monstrosity, which, taken asunder, seem men, and the reasonable creatures of God; but confused together, make but one great beast, and a monstrosity more prodigious than Hydra'. He has a quick sympathy with

the sorrows of others, and, though a physician, his prayer is with the husbandman and for healthful seasons. No one has put more beautifully the feeling which each one of us has had at times about patients:

'Let me be sick myself, if sometimes the malady of my patient be not a disease unto me; I desire rather to cure his infirmities than my own necessities; where I do him no good, methinks it is scarce honest gain; though I confess 'tis but the worthy salary of our well-intended endeavours.'

He has seen many countries, and has studied their customs and politics. He is well versed in astronomy and botany. He has run through all systems of philosophy but has found no rest in any. As death gives every fool gratis the knowledge which is won in this life with sweat and vexation, he counts it absurd to take pride in his achievements, though he understands six languages besides the patois of several provinces.

As a scientific man Browne does not take rank with many of his contemporaries. He had a keen power of observation, and in the *Pseudodoxia* and in his letters there is abundant evidence that he was an able naturalist. He was the first to observe and describe the peculiar substance known as adipocere, and there are in places shrewd flashes, such as the suggestion that the virus of rabies may be mitigated by transmission from one animal to another. But we miss in him the clear, dry light of science as revealed in the marvellous works of his contemporary, Harvey. Busy as a practical physician, he was an observer, not an experimenter to any extent, though he urges: 'Join sense unto reason and experiment unto speculation, and so give life unto embryon truths and verities yet in their chaos.' He had the highest veneration for Harvey, whose work he recog-

nized as epoch making—'his piece, *De Circul. Sang.*, which discovery I prefer to that of Columbus.' He recognized that in the faculty of observation the old Greeks were our masters, and that we must return to their methods if progress were to be made. He had a much clearer idea than had Sydenham of the value of anatomy, and tells his young friend, Power of Halifax, to make *Autopsia* his *fidus Achates.*

That he should have believed in witches, and that he should have given evidence in 1664 which helped to condemn two poor women, is always spoken of as a blot on his character; but a man must be judged by his times and his surroundings. While regretting his credulity, we must remember how hard it was in the sixteenth and seventeenth centuries not to believe in witches—how hard, indeed, it should be to-day for any one who believes implicitly the Old Testament!—and men of the stamp of Reginald Scot and Johannes Wierus, who looked at the question from our point of view, were really anomalies, and their strong presentation of the rational side of the problem had very little influence on their contemporaries.

For the student of medicine the writings of Sir Thomas Browne have a very positive value. The charm of high thoughts clad in beautiful language may win some readers to a love of good literature; but beyond this is a still greater advantage. Like the 'Thoughts of Marcus Aurelius' and the *Enchiridion* of Epictetus, the *Religio* is full of counsels of perfection which appeal to the mind of youth, still plastic and unhardened by contact with the world. Carefully studied, from such books come subtle influences which give stability to character and help to give a man a sane outlook on the complex problems of life. Sealed early of this tribe of authors,

a student takes with him, as *compagnons de voyage*, life-long friends whose thoughts become his thoughts and whose ways become his ways. Mastery of self, conscientious devotion to duty, deep human interest in human beings—these best of all lessons you must learn now or never: and these are some of the lessons which may be gleaned from the life and from the writings of Sir Thomas Browne.

FRACASTORIUS[1]

I

Upon few pictures in literature do we dwell with greater pleasure than that of Catullus returning to his home near Verona, wearied with the pleasures of the Capital, sick at heart after the death of his much beloved brother, and still, we may fancy, aching with the pangs of misprized love; but at the sight of 'Paeninsularum Sirmio insularumque ocellus', he breaks out into joyful song, and all his cares vanish.

Fifteen centuries later another 'Bard of Sirmio' sang the joys of the Lago di Garda, 'mid Caphian hills', and while we cannot claim for Fracastor a place beside his immortal townsman, he occupies a distinguished position in our annals as the author of the most successful medical poem ever written, and as the man from whom we date our first accurate knowledge of the processes of infection and contagion. The facts relating to the life of Fracastorius are to be obtained from the Venice edition of his works, 1584, and from the remarkably full and critical study by Mencken.[2] The best account in English is by Greswell.[3]

He was born in 1483 at Verona, of an ancient family, the Fracastoria (the name is also spelt Frastorius). There are related of his early days two marvellous

[1] Read before the Charaka Club, December, 1904. Reprinted from the *Proceedings of the Charaka Club*, vol. ii.

[2] *De Vita, &c., Hieronymi Fracastorii.* Lipsiae, MDCCXXXI.

[3] *Memoirs of Angelus Politianus*, &c., 2nd ed. Manchester, 1805.

HIERONYMI FRACASTORII VERONENSIS.

DE SYMPATHIA ET ANTIPATHIA RERVM LIBER VNVS

DE CONTAGIONE ET CONTAGIOSIS MORBIS ET CVRATIONE LIBRI III

VENETIIS. M D XLVI.

stories—that he was born with his lips so united that a surgeon had to be called in to separate them; and that, while an infant in his mother's arms, he escaped unhurt, while she was killed by a lightning stroke. He early gave signs of unusual ability, and was sent to Padua, at that time well deserving the encomium of Shakespeare: 'Fair Padua, nursery of the arts.' Here he made warm friends with many brilliant young men with whom in after life he remained on terms of close intimacy, and to some of whom his poems were dedicated. It is uncertain how long he resided at Padua, but at the outbreak of war he joined the Venetian forces under the command of his friend Livianus, at whose defeat and capture Fracastor returned to his native town. There is no information as to his teachers in medicine, but Mencken suggests that from Hieronymus Turrianus he got his most important training. He seems very quickly to have gained reputation as a physician, and his services were sought by rich and poor alike. It is stated that he practised without pecuniary reward. Poetry, astronomy, cosmography, and natural philosophy shared with medicine his time and his labours. He kept up an extensive correspondence with many distinguished men in science and in letters.

'He performed wonders by his exact knowledge of herbs and simples, by searching the best books of the ancients. The most excellent antidote, *Diascordium*, was of his preparing. . . . The age in which he lived saw nothing equal to his learning but his honesty.'

So writes the author of the *Life* prefixed to the English translation of the *Morbus Gallicus*. He lived for the greater part of the time in the country near Verona, amid the hills overlooking the Lago di Garda.

'Here,' says his biographer, 'after a moderate ascent, is seen the Villa of Fracastor in the midst of a level ground, yet so elevated as to command a view of the lake. The house is plain and has little to boast from artificial ornament, but much from the natural beauty of the situation. It is of square form with an open aspect on every side except the north. On the east, on which part the Adige rolls its rapid current, hastening from the interior of Germany, and laves the foot of the mountain, it commands a view of Verona, with innumerable villas scattered here and there in the subjacent plain. . . . On the west the appearance of the Lago di Garda is no less pleasing. Here hills rising in alternate succession meet the view; here the sometimes disturbed and tumultuous billows of the lake—the charming peninsula of Catullus; vessels with extended sails; and fishing barks seen approaching from remote distances; and numerous towns and hamlets seated on the sunny promontories. . . . Here our Girolamo was accustomed to enjoy the conversation of his friends. Here he found that tranquillity and rural seclusion, equally propitious to the muses and to severer studies; and here he produced many of those works which spread his celebrity throughout Europe and covered his brow with the wreath of fame.'

In a poem addressed to Turrianus, Fracastor has himself celebrated the beauties of his home 'mid Caphian hills'.

He died of apoplexy in 1553, aged seventy-one. Monuments to his memory were erected at Padua by his friend Rhamnusius and by his fellow citizens.

'He was of low stature, but of good bulk, his shoulders broad, his hair black and long, his face round, his eyes black, his nose short and turning upwards by his continual contemplation of the stars; a lively air was spread over his countenance, that displayed the serenity and ingenuity of his mind.'

Mencken makes fun of this description, particularly

HIERONYMI FRACASTORII
SYPHILIS
SIVE MORBVS GALLICVS

Veronæ, M D X X X, *menſe Auguſto*.

Non ſine Priuilegio, mulctáq; pecuniaria, & excõmunicationis pœna: pro ut in Priuilegijs continetur.

of the snub nose, and certainly the pictures give a fine Roman nose of full proportions.

The important works of Fracastor are the two of which I shall speak. An astronomical work, *Homocentrica*, with a discussion of the old question of critical days, appeared in 1538. The work on *Sympathia and Antipathia*, Bk. I, appeared in 1546 in the same volume with *De Contagione*. Many fine editions of the collected works appeared after his death, and in the seventeenth century there were six or seven editions. The minor poems are to be found in all of them.

II

The scientific reputation of Fracastorius rests upon the work *De Contagione*, &c., the title-page of which is here reproduced. It contains among other things three contributions of the first importance—a clear statement of the problems of contagion and infection, a recognition of typhus fever, and a remarkable pronouncement on the contagiousness of phthisis.

In the sixteenth century, and indeed for a much later period, following the views of Hippocrates and Galen, the fevers were thought to be due to a corruption or putridity of the humours, and no very clear ideas had been expressed as to their mode of propagation, still less of their origin. The simple classification into ephemeral, putrid, and hectic forms was maintained, though the recognition by the Arabians of specific varieties, such as small-pox and measles, had stimulated greatly the study of fevers. In the course of an active professional life, Fracastorius had witnessed the rapid spread of syphilis and repeated outbreaks of the plague and exanthematic typhus, so that he had had exceptional opportunities to study the problems presented by

them. In answer to the question, What is contagion? he replies: 'As the name indicates, contagion is an infection passing from one individual to another', and the infection is absolutely the same and the virus is the same in him who receives and in him who gives. A fire in one house destroying an adjoining one does not do so by contagion, as in the sense in which the word is used it is not a wholesale destruction, but a change in the elements of which the body is composed, brought about by particles of such minuteness that they do not come within range of our senses.

There are three fundamentally distinct classes of infections: (1) Diseases infecting by contact alone; (2) those infectious by means of an intermediate agent —fomites, as garments, &c.; and (3) those which infect at a distance through the air, as the pestilent fevers, &c.

He draws an analogy between the diseases of the first class and the putrefaction passing by contact from one grape or pear to another, the seeds of contagion—*seminaria contagionum*—passing from one to another.

The contagion through fomites is the same in reality as in the direct; the virus remains intact and is as active as in the body from which it came, and it may be preserved two or three years just as odours are kept by small particles which retain their activity. The whole question of fomites he discusses with a clearness new to medicine; indeed I do not know that the word was used by any previous writer.

More curious and more astonishing, he thinks, are the contagions of the third class, which act at a distance, and seem indeed to be of a different nature and to act on a different principle. The germs are more powerful

and more subtile, with a greater facility in penetrating bodies. They differ extraordinarily among themselves: some attack trees and grains, others animals; some attack men only, others oxen; some the old, others only the young; some males, others only females. The different germs attack different organs; some the eyes, others the deeper organs, as the lungs.

Fracastorius draws a remarkable parallel between the processes of contagion and the fermentation of wine. It is not the same as putrefaction, which differs in the absence of any new generation, and is accompanied with an abominable smell. Certain poisons resemble contagions in their action, but they differ essentially in not producing in the individual a principle or germ capable of acting on another person.

In the second book the special fevers are considered under the two divisions of non-pestilent and pestilent, the former, characterized by a milder course, embracing chiefly small-pox and measles, between which, however, he does not draw a very clear distinction. In 1505 and 1528 there appeared for the first time in Italy a disease characterized by high fever, early loss of consciousness, and a copious petechical and lenticular rash. Fracastorius gives an excellent description of it as a disease quite distinct from the other pestilent fevers, particularly the plague, with which it had been confounded, and we have no difficulty in recognizing it as epidemic or exanthematic typhus.

The chapter *de phthisi contagiosa* is of special interest to us as one of the earliest and clearest statements on the subject. He says that previous writers have spoken of phthisis as originating in catarrh attacking the lungs, or the rupture of a blood-vessel, or an

abscess in the lung, or the sequence of a pleurisy or a pneumonia; but very few have spoken of contagion as an all-important cause. Habitual residence with a consumptive he regards as one of the most common sources of the disease, the germs of which may remain attached to clothing and rooms for a year or more. He recognizes the similarity of the hereditary and the contagious forms.

The third book, devoted to treatment, is not very satisfactory, though there is a modern flavour in the statement that the germs, which must be first attacked, may be scattered or broken or chased away or dispelled by antipathy. In the section on the treatment of phthisis he has not progressed beyond Galen or Celsus.

By far the best chapter in the book is devoted to syphilis, an extended consideration in prose of the subject the poetical consideration of which as a younger man had made him famous.

III

The countless contributions on the subject of syphilis in the fifteenth and sixteenth centuries belong now to the musty volumes of forgotten lore; only two, possessing perennial interest, appear and reappear as witnesses to the vigour and vitality of the minds which produced them. Both were written by poets, but the better poet wrote in prose, and, while not a physician, gave one of the most realistic pictures of the disease which exists in literature. Ulrich von Hutten, poet, satirist, soldier, reformer, the greatest name after Luther and Erasmus in the Reformation, suffered with the new disease for many years. The famous treatise on Guaiacum (1519) is an account of his own case and those of his friends,

and of their weary sufferings until relieved by the new drug, guaiacum (*lignum sanctum*), the mode of preparation of which and the indications for use he lays down with the skill of an artist. Apart altogether from the unique interest attaching to von Hutten as a man, his little book is well worth reading, as giving a graphic first-hand account of syphilis as it appeared early in the sixteenth century. German editions are easy to procure. One, edited by Oppenheimer, was recently published by Hirschwald, Berlin, 1902.[1]

The other contribution is the celebrated poem of Fracastorius, the title-page of which is here reproduced (p. 282). Next to the famous *Regimen Sanitatis* of the School of Salernum, it ranks as the most popular poem in medical literature. The original edition is a small quarto, issued from a Verona press, and not a very good example of the printing of the period. To its enduring popularity the numerous editions in the Surgeon-General's Library, Washington, and in the British Museum bear witness, and every few years a new translation appears in French, German, or Italian. An English translation by Nahum Tate in 1686 was published afterwards as a sort of supplement—with separate pagination—to Dryden's *Examen Poeticum*, or Miscellany Poems, 1693, third part. A little quarto, of seventy pages, in Latin verse, it brought to the author both literary and professional fame. His contemporaries exhausted the resources of the language in praise of a performance whose Virgilian beauties excelled anything that had been written since classical days. Modern commentators have been more critical and have not

[1] Only two English editions have appeared, one by Thomas Paynell, 1533, the other by Daniel Turner, 1730 (Paynell's edition revised).

found the poem so full of 'divine graces'. A well-known scholar whose judgement I asked sent the following:

'I am frankly disappointed with Fracastorius's poem. The Latin and the metrical propriety are admirable, but there seems to me to be an intolerable amount of "gas" in it, and I think he attached more importance to the form than to the matter. I had hoped he would have been more definite about the form in which the disease showed itself in the sixteenth century, and the remedies he proposes seem to me to be used more as an opportunity of introducing a number of sounding words of trees and places in a setting of classical mythology than as a series of well-considered prescriptions. But perhaps I do him injustice. Lucretius with his account of the plague at Athens would have given him a better model.'

Following the example of von Hutten, who dedicated his treatise to the Archbishop of Mayence, Fracastorius inscribed his work to his friend Bembo, a Prince of the Church and Secretary to Pope Leo X. As at this time the disease was not thought to be wholly of venereal origin, such a dedication would not be deemed inappropriate. Apart altogether from the poetical interest, which after all is subsidiary, the work is of the greatest value as a contemporary picture of the disease, embodying the opinions of an intelligent observer upon its origin. In one other point it is notable. The word syphilis, invented by Fracastor for the disease, occurs in the poem as the name of one of the characters. Nowhere in the poem does he say why the disease is called after the shepherd or why he invented it, but in his section on 'le mal Français' in *de Contagione*, 1546, he says: 'In my poem I gave it the name syphilis.' It had been known by many names—morbus gallicus, mal Français, the French pox, the Neapolitan disease,

and morbus venereus, &c.; but from this time the new name became common, and gradually came into general use.

To appreciate the rapid popularity of the poem, it is to be remembered that in the early part of the sixteenth century syphilis was regarded as a mysterious epidemic, hitherto unknown, which had struck terror into all hearts by the rapidity of its spread, the ravages it made, and the apparent helplessness of the physicians to cure it.

The poem is an exposition of Fracastor's views on the origin, symptomatology, and cure of the new disease which had seized astonished Europe. He accepts the usual statement that it first appeared in the French army before Naples about 1495.

> To Naples first it came
> From France, and justly took from France his name,
> Companion of the War.

He discussed the American origin, the popular one of the day:

> Say, Goddess, to what cause we shall at last
> Assign this plague, unknown to ages past;
> If from the western climes 'twas wafted o'er,
> When daring Spaniards left their native shore;
> Resolv'd beyond th' Atlantick to descry
> Conjectured worlds, or in the search to dye.

More probable is it, he thinks, that the malign influence of the planets, particularly the conjunction of Mars and Saturn, had brought about conditions favourable for the outbreak of the plague which had existed for ages but slumbered at intervals.

> Long since he scatter'd his infernal flame,
> And always being had, though not a name.

Our elements are slaves to the 'rabble of the sky', and when a planet enters a new course some mighty

work of Fate is to be expected. Two hundred years ago, when Mars and Saturn were last in conjunction, an unknown fever raged through the East, and similar plagues were predicted by the astronomers as a result of their recent position in the skies.

The description of the symptoms is very complete, and there is no difficulty in recognizing the disease. There is a period of incubation—'the moon four monthly rounds shall steer'—before the appearance of convincing symptoms, and all this time the malady lurks within and grows confirmed. Gradually the victim begins to feel depressed, the roses fade from his cheeks, a leaden hue spreads over his face, and then local sores appear on the genitalia. Fracastor, with a majority of the writers of that date, thought the disease had very often an extra-genital origin. 'When night's ungrateful shades arise' then begin the execrable pains in arms, shoulders, and legs. Soon foul blotches spread over the skin and pustules form. The muscles are attacked, deep ulcers form, and the bones are laid bare. Instead of tuneful speech imperfect sounds result from involvement of the vocal cords. In places the humour grows fixed and 'hardens to a node'. He then pictures a fair and beautiful youth, full of the pride of life and the joys of health, stricken with the terrible plague and deformed out of all recognition; and it reminds him of the state of his beloved Italy, torn with strife and at the mercy of foreign foes.

> Now for our second task, and what relief
> Our age has found against this raging grief.

The patient's constitution and the temper of his blood must be considered. Get out in the open air, away from fens and lakes; take to the chase, but not

too actively; the boar but not the stag may be attempted. Even the plough, the rake, and the axe are not to be despised. The very house yields exercise, the hall has room for fencing and the bounding ball. Minerva, not Venus, may be sought.

Diet is all-important. Avoid fish, as they convert more to humours than to nourishment: pork may be eaten and poultry, but all coarser foods must be spurned. Milk is the best drink; wine as a rule is to be avoided; plenty of fresh vegetables are to be taken.

If strength suffices, the patient may be bled, particularly in the spring. A bitter tonic of fennel and hops is to be ordered.

> The greater part, and with success more sure,
> By mercury perform the happy cure;
> A wondrous virtue in that mineral lies.

Its healing power was revealed to one Ilceus, a huntsman, who was afflicted with the disease in Syria. Callirrhoe, a goddess, directed him how to get the precious metal from 'the spacious voids and subterranean roads', and after bathing in the lakes of liquid silver he was healed. Full directions for inunction are given. The 'lard of swine' is used for a vehicle, mixed with larch gum and turpentine. The whole body is to be smeared except the head and breast, and then the patient is to sweat profusely under thick bed-clothing. The course is to be repeated for ten days until

> The mass of humours now dissolved within,
> To purge themselves by spittle shall begin.

Victorious health is now at hand, and all that remains is to take a bath with rosemary and lavender, vervain and yarrow, to wash all the dregs away.

But the virtues of the 'sacred tree' must also employ his muse to tell of blessing never seen or sung before. The tree is first described, growing in a spacious isle, with branches ever green. So hard is the substance that it makes a saw toothless and scarcely receives a flaw from the axe. In variegated hue the wood resembles the 'gaudy bow', and the natives, conscious of its use, plant it on the hills and vales. The mode of preparation and administration is as follows:

Or break in splinters, which they steep a while
In fountains, and when soak'd, in vessels boil,
Regardless how too fierce a fire may make
The juice run o'er, whose healing froth they take,
With which they bathe their limbs where pustles breed,
And heal the breaches where dire ulcers feed.
Half boil'd away the remnant they retain,
And adding hony boil the chips again:
To use no liquor when they dine,
Their countries law and greater priest enjoyn:
The first decoction with the rising light
They drink, and once again at fall of night;
This course they strictly hold when once begun,
Till Cynthia has her monthly progress run,
Hous'd all the while where no offensive wind,
Nor the least breath of air can entrance find.

It is interesting to compare the account of the cure with that given by Ulrich von Hutten. While not so full in detail, it agrees in the main, and particularly in the last injunction, to 'house' the patient during it, so that no fresh air can reach him, and to restrict the diet to 'just so much food as can bare life preserve'. In both the cure was to last for thirty days. As Fournier remarks in a note in his translation of the *Morbus Gallicus*, the identity of the directions in these two writers, pharmacological and general, speak for a fixed

and consecrated plan which was followed with scrupulous exactness.

There is told the story of the discovery of the New World by Columbus, and the joy of the sailors in its wonders. Unhappily they shot some beautiful birds, beloved of the Sun-God, and a prophecy of dire ills was uttered by one of the birds which escaped:

> Nor end your sufferings here; a strange disease,
> And most obscene, shall on your bodies seize.

By chance, before they left the natives held the great festival to the Sun-God, but grief was on all faces—'all languished with the same obscene disease'; but the priest in snowy robes displayed the boughs of healing guaiacum with which he purged the tainted ground. This the native prince assured the Spanish General was the disease the holy bird had predicted would attack his men, and he told the story of the origin of the plague, and the discovery of guaiacum as a cure.

> A shepherd once (distrust not ancient fame)
> Possest these downs, and Syphilus his name.

He kept the flocks of King Alcithous, and one year the drought was so extreme that the cattle perished for want of water. So incensed was Syphilus that he blasphemed the Sun-God in good set terms and decided from henceforth to offer no sacrifices to him, but to worship King Alcithous. The shepherd won all the people to his way, and the king was overjoyed and proclaimed himself 'in Earth's low sphere to be the only and sufficient deity' But the Sun-God, enraged, darted forth infection on air, earth, and streams, and Syphilus became the first victim of the new disease.

> He first wore buboes dreadful to the sight,
> First felt strange pains and sleepless past the night;
> From him the malady received its name.

Becoming a general pestilence, the Sun-God was appealed to, and his priests promised a cure if a proper sacrifice was made to appease the offended deity. The lot fell on Syphilus, who was bound on the altar with his throat laid open to the uplifted knife, but at the last moment Juno interceded and commanded them to slay a heifer in his stead. An annual sacrifice in commemoration of this event was held, and a swine bound to the altar 'to witness Syphilus his crime'. The guaiacum was given as a cure for the disease. The afflicted sailors learned of the natives how to prepare the remedy, and not forgetful of their country's good, freighted their largest ships with the rich wood.

> Iberian coasts, you first were happy made
> With this rich plant, and wonder'd at its aid;
> Known now to France and neighbouring Germany,
> Cold Scythian coasts, and temp'rate Italy,
> To Europe's bounds all bless the vital tree.

Joseph, the other long poem of Fracastorius, was translated into English by Josuah Sylvester, with the following remarkable title: 'The Maiden's Blush: Joseph, Mirror of Modesty, Map of Pietie, Maze of Destinie, or rather Divine Providence. From the Latin of Fracastorius. Translated and dedicated to the High-Hopefull Charles Prince of Wales. London, 1620. 12mo.'

HARVEY AND HIS DISCOVERY[1]

I

Only those of us, Mr. President and Fellows, who have had the good fortune to hold the distinguished position which by your kind grace, Sir, I hold to-day, only those of us who have delivered the Harveian Oration, can appreciate the extraordinary difficulties besetting a subject, every aspect of which has been considered, very often too, by men who have brought to the task a combination of learning and literary skill at once the envy and the despair of their successors. But I take it, Sir, that in this Ambarvalia or commemorative festival for blessing the fruits of our great men, ordained definitely as such by him whose memory is chiefly in our minds to-day, our presence here in due order and array, confers distinction upon an occasion of which the oration is but an incident. But, honour worthy of such a theme should be associated with full knowledge of the conditions under which these great men lived and moved; and here comes in the real difficulty, because it is rarely possible to bring the fruits of independent critical investigation into their lives and works. Particularly hard is it for those of us who have had to live the life of the arena: our best efforts bear the stamp of the student, not of the scholar. In my own case, a deep reverence for the mighty minds of old, and a keen appreciation of the importance to our profession of

[1] Being the Harveian Oration delivered at the Royal College of Physicians, London, October 18, 1906.

a study of history, may be put in the scales against defects for the appreciation of which I have still remaining sufficient self-detachment. The lesson of the day is the lesson of their lives. But because of the ever-increasing mental strain in this age of hurry, few of us have the leisure, fewer still, I fear, the inclination, to read it thoroughly. Only with a knowledge of the persistency with which they waged the battle for Truth, and of the greatness of their victory, does the memory of the illustrious dead become duly precious to us.

History is simply the biography of the mind of man; and our interest in history, and its educational value to us, is directly proportionate to the completeness of our study of the individuals through whom this mind has been manifested. To understand clearly our position in any science to-day, we must go back to its beginnings, and trace its gradual development, following certain laws, difficult to interpret and often obscured in the brilliancy of achievements—laws which everywhere illustrate this biography, this human endeavour, working through the long ages; and particularly is this the case with that history of the organized experience of the race which we call science.

In the first place, like a living organism, Truth grows, and its gradual evolution may be traced from the tiny germ to the mature product. Never springing, Minerva-like, to full stature at once, Truth may suffer all the hazards incident to generation and gestation. Much of history is a record of the mishaps of truths which have struggled to the birth, only to die or else to wither in premature decay. Or the germ may be dormant for centuries, awaiting the fullness of time.

Secondly, all scientific truth is conditioned by the state of knowledge at the time of its announcement.

Thus, at the beginning of the seventeenth century, the science of optics and mechanical appliances had not made possible (so far as the human mind was concerned) the existence of blood capillaries and blood corpuscles. Jenner could not have added to his *Inquiry* a discourse on immunity; Sir William Perkin and the chemists made Koch possible; Pasteur gave the conditions that produced Lister; Davy and others furnished the preliminaries necessary for anaesthesia. Everywhere we find this invariable filiation, one event following the other in orderly sequence—'Mind begets mind,' as Harvey says; 'opinion is the source of opinion. Democritus with his atoms, and Eudoxus with his chief good, which he placed in pleasure, impregnated Epicurus; the four elements of Empedocles, Aristotle; the doctrine of the ancient Thebans, Pythagoras and Plato; geometry, Euclid' (*De Generatione*).

And, thirdly, to scientific truth alone may the *homo mensura* principle be applied, since of all mental treasures of the race it alone compels general acquiescence. That this general acquiescence, this aspect of certainty, is not reached *per saltum*, but is of slow, often of difficult, growth—marked by failures and frailties, but crowned at last with an acceptance accorded to no other product of mental activity—is illustrated by every important discovery from Copernicus to Darwin.

The growth of Truth corresponds to the states of knowledge described by Plato in the *Theaetetus*—acquisition, latent possession, conscious possession. Scarcely a discovery can be named which does not present these phases in its evolution. Take, for example, one of the most recent: Long years of labour gave us a full knowledge of syphilis; centuries of acquisition added one fact to another, until we had a body of clinical and

pathological knowledge of remarkable fullness. For the last quarter of a century we have had latent possession of the cause of the disease, as no one could doubt the legitimate inference from discoveries in other acute infections. The conscious possession has just been given to us. After scores of investigators had struggled in vain with the problem, came Schaudinn with an instinct for truth, with a capacity to pass beyond the routine of his day, and with a vision for the whole where others had seen but in part. It is one of the tragedies of science that this brilliant investigator, with capabilities for work so phenomenal, should have been cut off at the very threshold of his career. The cancer problem, still in the stage of latent possession, awaits the advent of a man of the same type. In a hundred other less important problems, acquisition has by slow stages become latent possession ; and there needs but the final touch—the crystal in the saturated solution—to give us conscious possession of the truth. But when these stages are ended, there remains the final struggle for general acceptance. Locke's remark that 'Truth scarce ever yet carried it by vote anywhere at its first appearance' is borne out by the history of all discoveries of the first rank. The times, however, are changing; and it is interesting to compare the cordial welcome of the pallid spirochaete with the chilly reception of the tubercle bacillus. Villemin had done his great work, Cohnheim and Salmonson had finally solved the problem of infectivity, when Koch published his memorable studies. Others before him had seen the bacillus, but the conscious possession of the truth only came with his marvellous technique. Think of the struggle to secure acceptance! The seniors among us who lived through that instructive period remember well that

only those who were awake when the dawn appeared assented at once to the brilliant demonstration. We are better prepared to-day; and a great discovery like that of Schaudinn is immediately put to the test by experts in many lands, and a verdict is given in a few months. We may have become more plastic and receptive, but I doubt it; even our generation—that great generation of the last quarter of the nineteenth century, had a practical demonstration of the slowness of the acceptation of an obvious truth in the long fight for the aseptic treatment of wounds. There may be present some who listened, as I did in October, 1873, to an introductory lecture at one of the largest of the metropolitan schools, the burden of which was the finality of surgery. The distinguished author and teacher, dwelling on the remarkable achievements of the past, concluded that the art had all but reached its limit, little thinking that within a mile from where he spoke, the truth for which thousands had been striving—now a conscious possession in the mind of Joseph Lister—would revolutionize it. With scores of surgeons here and there throughout the world this truth had been a latent possession. Wounds had healed *per primam* since Machaon's day; and there were men before Joseph Lister who had striven for cleanliness in surgical technique; but not until he appeared could a great truth become so manifest that it everywhere compelled acquiescence. Yet not without a battle—a long and grievous battle, as many of us well knew who had to contend in hospitals with the opposition of men who could not—not who would not—see the truth.

Sooner or later—insensibly, unconsciously—the iron yoke of conformity is upon our necks; and in our minds, as in our bodies, the force of habit becomes

irresistible. From our teachers and associates, from our reading, from the social atmosphere about us, we catch the beliefs of the day, and they become ingrained —part of our nature. For most of us this happens in the haphazard process we call education, and it goes on just as long as we retain any mental receptivity. It was never better expressed than in the famous lines that occurred to Henry Sidgwick in his sleep:

> We think so because all other people think so;
> Or because—or because—after all, we do think so;
> Or because we were told so, and think we must think so;
> Or because we once thought so, and think we still think so;
> Or because, having thought so, we think we will think so.

In departing from any settled opinion or belief, the variation, the change, the break with custom may come gradually; and the way is usually prepared; but the final break is made, as a rule, by some one individual, the masterless man of Kipling's splendid allegory, who sees with his own eyes, and with an instinct or genius for truth, escapes from the routine in which his fellows live. But he often pays dearly for his boldness. Walter Bagehot tells us that the pain of a new idea is one of the greatest pains to human nature. 'It is, as people say, so upsetting; it makes you think that, after all, your favourite notions may be wrong, your firmest beliefs ill-founded; it is certain that till now there was no place allotted in your mind to the new and startling inhabitant; and now that it has conquered an entrance, you do not at once see which of your old ideas it will not turn out, with which of then. it can be reconciled, and with which it is at essential enmity.' It is on this account that the man who expresses a new idea is very

apt to be abused and ill-treated. All this is common among common men, but there is something much worse which has been illustrated over and over again in history. How eminent soever a man may become in science, he is very apt to carry with him errors which were in vogue when he was young—errors that darken his understanding, and make him incapable of accepting even the most obvious truths. It is a great consolation to know that even Harvey came within the range of this law—in the matter of the lymphatic system; it is the most human touch in his career.

By no single event in the history of science is the growth of truth, through the slow stages of acquisition, the briefer period of latent possession, and the period, so glorious for us, of conscious possession, better shown than in the discovery of the circulation of the blood. You will all agree with me that a Fellow of this college must take his courage in both hands who would, in this place and before this audience, attempt to discuss any aspect of this problem. After nearly three centuries of orations the very pictures and books in this hall might be expected to cry out upon him. But I have so taken my courage, confident that in using it to illustrate certain aspects of the growth of truth I am but obeying the command of Plato, who insists that principles such as these cannot be too often or too strongly enforced. There is a younger generation, too, the members of which are never the worse for the repetition of a good story, stale though it may be in all its aspects to their elders; and then there is that larger audience to be considered to which the season is never inappropriate to speak a word.

II

The sixteenth century, drawing to a close, had been a period of acquisition unequalled in history. Brooding over the face of the waters of mediaevalism, the spirit of the Renaissance brought forth a science of the world and of man which practically created a new heaven and a new earth, and the truths announced by Copernicus and Galileo far transcended

> the searching schoolmen's view
> And half had staggered that stout Stagyrite.

Among other things, it had given to medicine a new spirit, a new anatomy, and a new chemistry. In the latter part of the fifteenth century Hippocrates and Galen came to their own again. A wave of enthusiasm for the fathers in medicine swept over the profession; and for at least two generations the best energies of its best minds were devoted to the study of their writings. How numerous and important is that remarkable group of men, the medical humanists of the Renaissance, we may judge by a glance at Bayle's *Biographie Médicale*, in which the lives are arranged in chronological order. From Garbo of Bologna, surnamed the expositor, to Rabelais, more than 150 biographies and bibliographies are given, and at least one-half of these men had either translated or edited works of the Greek physicians. Of our founder, one of the most distinguished of the group, and of his influence in reviving the study of Galen and so indirectly of his influence upon Harvey, Dr. Payne's story still lingers in our memories. Leonicenus, Linacre, Gonthier, Monti, Koch, Camerarius, Caius, Fuchs, Zerbi, Cornarus, and men of their stamp not only swept away Arabian impurities from the medicine of

the day, but also revived Greek ideals and introduced scientific methods.

The great practical acquisition of the century was a new anatomy. Vesalius and his followers gave for the first time an accurate account of the structure of the human body, and while thus enlarging and correcting the work of Galen contributed to weaken the almost divine authority with which he dominated the schools. Nearly another century passed before chemistry, in the hands of Boyle and others, reached its modern phase, but the work of Paracelsus, based on that of the 'pious Spagyrist', Basil Valentine, had by showing its possibilities directed men's minds strongly to the new science. But the new spirit alone was essential; since it established the intellectual and moral freedom by which the fetters of dogma, authority, and scholasticism were for ever loosened from the minds of men.

Into this world, we may say, stepped a young Folkestone lad, when, on the last day of May, 1593, he matriculated at Cambridge. Harvey's education may be traced without difficulty, because the influences which shaped his studies were those which had for a century prevailed in the profession of this country. We do not know the reason for selection of Caius College, which, so far as I can gather, had no special connexion with the Canterbury school. Perhaps it was chosen because of the advice of the family physician, or of a friend, or of his rector; or else his father may have known Caius; or the foundation may already have become famous as a resort for those about to 'enter on the physic line'. Or, quite as likely, as we so often find in our experience, some trivial incident may have turned his thoughts towards medicine. When he came

up in 1593, there were those of middle age who could tell racy stories of Caius, the co-founder of the college, against whose iron rule they had rebelled. 'Charged not only with a show of a perverse stomach to the professors of the Gospel, but with Atheism,' the last days of Caius's noble life were embittered by strife and misunderstanding. Doubtless the generous souls among them had long since learned to realize the greatness of his character, and were content to leave 'the heat of his faith to God's sole judgement, and the light of his good works to men's imitation', with which words, half a century later, the inimitable Fuller concludes a short sketch of his life. I like to think that, perhaps, one of these very rebels, noting the studious and inquisitive nature of Harvey, had put into the lad's hand the little tractate, *De libris propriis*, from which to glean a knowledge of the life and works of their great benefactor.

The contemplation of such a career as that of Caius could not but inspire any young man with enthusiasm. No one in the profession in England had before that time reached a position which can be called European. An enthusiastic student and the friend of all the great scholars of the day; a learned commentator on the works of the Fathers; the first English student of clinical medicine; a successful teacher and practitioner; a keen naturalist; a liberal patron of learning and letters; a tender and sympathetic friend—Johannes Caius is one of the great figures in our history. Nor need I, before this audience, dwell on his devotion to our interests, except to say that the memory of no Fellow on our roll should be more precious to us. Four years hence, on October 6, will occur the quatercentenary of his birth. As well in love as in gratitude, we could celebrate it in no more appropriate manner,

and in none that would touch his spirit more closely, than by the issue of a fine edition of his principal works (including the manuscript annals of the College). For the preparation of this there are those among us well fitted, not less by veneration for his memory than by the possession of that critical scholarship which he valued so highly.

When Harvey set out on the grand tour, Italy was still the *mater gloriosa studiorum*, to which one hundred years earlier, so tradition says, Linacre on leaving had erected an altar. The glamour of the ideals of the Renaissance had faded somewhat since the days when John Free, an Oxford man, had made the ancient learning his own; and had so far bettered the instruction of his masters that he was welcomed as a teacher in Padua, Ferrara, and Florence. In a measure, too, the national glory had departed, dimmed amid the strife and warfare which had cost the old republics their independence. Many years earlier Fracastorius, one of our medical poets, had sung of her decadence:

> To what estate, O wretched Italy,
> Has civil strife reduc'd and moulder'd Thee!
> Where now are all thy ancient glories hurl'd?
> Where is thy boasted Empire of the world?
> What nook in Thee from barbarous Rage is freed
> And has not seen thy captive children bleed?[1]

And matters had not improved but had grown worse. In the sixteenth century Italian influence had sunk deeply into the social, professional, and commercial life of England, more deeply, indeed, than we appreciate;[2] and it was not until a generation or two later that the candlesticks were removed from the Cisalpine towns to

[1] *Syphilis.* Englished by N. Tate, 1686.

[2] *Italian Renaissance in England*, Einstein. Macmillan, 1902.

Montpellier, Paris, and Leyden. In 1598 a well-to-do young Englishman who wished to study medicine thoroughly went to North Italy, and most naturally to Padua—'fair Padua, nursery of the arts'—whose close affiliations with us may be gathered from the fact that she has given us more Presidents than any university save Oxford and Cambridge. In the years that had passed since Vesalius had retired in disgust, the fame of its anatomical school had been well maintained by Fallopius, Columbus, and Fabricius, worthy successors of the great master. Of each may be said what Douglas says of the first named: '*In docendo maxime methodicus, in medendo felicissimus, in secando expertissimus.*' While the story of Harvey's student life can never be told as we could wish, we know enough to enable us to understand the influences which moulded his career. In Fabricius he found a man to make his life-model. To the enthusiastic teacher and investigator were added those other qualities so attractive to the youthful mind, generous sympathies and a keen sense of the wider responsibilities of his position, as shown in building, at his own expense, a new anatomical theatre for the University. Wide as was the range of his master's studies, embracing not anatomy only, but medicine and surgery also, the contributions by which he is most distinguished are upon subjects in which Harvey himself subsequently made an undying reputation. The activity of his literary life did not begin until he had been teaching nearly forty years, and it is a fact of the highest significance that, during the very period of Harvey's stay in Padua, Fabricius must have been deep in the study of embryology and of the anatomy of the vascular system. His great work on generation was the model on which Harvey based his

own, in some ways more accurate, studies—studies in which, as my colleague Professor Brooks of the Johns Hopkins University has pointed out, he anticipated Wolf and von Baer.

The work of Fabricius which really concerns us here is the *de Venarum Ostiolis*. Others before him had seen and described the valves of the veins, Carolus (one of the great Stephani), Sylvius, and Paul Sarpi. But an abler hand now attacked the subject, and has left us a monograph which for completeness and for accuracy and beauty of illustration has scarcely its equal in anatomical literature. If we compare Plate VII, for example, with the illustrations of the same structures in the Bidloo or the Cowper *Anatomy*, published nearly one hundred years later, we can appreciate the advantages which Harvey must have enjoyed in working with such a master. Indeed, it is not too far-fetched to imagine him, scalpel in hand, making some of the very dissections from which these wonderful drawings were taken. But here comes the mystery. How Fabricius, a man who did such work—how a teacher of such wide learning and such remarkable powers of observation, could have been so blinded as to overlook the truth which was tumbling out, so to speak, at his feet, is to us incomprehensible. But his eyes were sealed, and to him, as to his greater predecessors in the chair, clear vision was denied. The dead hand of the great Pergamite lay heavy on all thought, and Descartes had not yet changed the beginning of philosophy from wonder to doubt. Not without a feeling of pity do we read of the hopeless struggle of these great men to escape from slavish submission to authority. But it is not for us in these light days to gauge the depth of the sacred veneration with which they regarded the Fathers. Their

mental attitude is expressed in a well-known poem of Browning's:

> those divine men of old time
> Have reached, thou sayest well, each at one point,
> The outside verge that rounds our faculty,
> And where they reached who can do more than reach?

Willing to correct observations or to extend anatomy by careful dissection, it was too much to expect from them either a new interpretation of the old facts or a knowledge of the method by which those facts could be correctly interpreted.

The ingenious explanation which Fabricius gave of the use of the valves of the veins—to serve as dams or checks to the flow of the blood, so that it would not irrigate too rapidly and overflow the peripheral vessels to the deprivation of the upper parts of the limbs—shows how the old physiology dominated the most distinguished teacher of the time in the most distinguished school in Europe. This may have been the very suggestion to his pupil of the more excellent way. Was it while listening to this ingenious explanation of his master that, in a moment of abstraction—dimly dreaming, perhaps, of an English home far away and long forsaken—there came to Harvey a heaven-sent moment, a sudden inspiration, a passing doubt nursed for long in silence, which ultimately grew into the great truth of 1616?[1]

The works of Vesalius, of Fallopius, and of Fabricius effected a revolution in anatomy, but there was not at the close of the sixteenth century a new physiology. Though he had lost an anatomical throne, Galen ruled absolutely in all conceptions of the functions of the

[1] Boyle states that in the only conversation he ever had with him, Harvey acknowledged that a study of the valves of the veins had led him to the discovery of the circulation of the blood.

body, and in no department more serenely than in that relating to the heart, the blood and its movements. Upon his views I need not dwell further than to remind you that he regarded the liver as the source of the blood, of which there were two kinds, the one in the veins, the other in the arteries, both kinds in ceaseless ebb and flow, the only communication between these closed systems being through pores in the ventricular septum. He knew the lesser circulation, but thought it only for the nutrition of the lungs. The heart was a lamp furnished with oil by the blood and with air by the lungs. Practically until the middle of the seventeenth century Galen's physiology ruled the schools, and yet for years the profession had been in latent possession of a knowledge of the circulation. Indeed, a good case has been made out for Hippocrates, in whose works occur some remarkably suggestive sentences.[1] In the sixteenth century the lesser circulation was described with admirable fullness by Servetus and by Columbus, and both Sarpi and Caesalpinus had Hippocratic glimmerings of the greater circulation. These men, with others doubtless, were in latent possession of the truth. But every one of them saw darkly through Galenian glasses, and theirs was the hard but the common lot never to reach such conscious possession as everywhere to make men acquiesce. One must have the disinterestedness of the dead to deal with a problem about which controversy has raged, and in which national issues have been allowed to blur the brightness of an image which would be clear as day to those with eyes to see. Nor would I refer to a matter long since settled by those best competent to judge, had not the well-known work of Luciani, the distinguished

[1] Willis's *Harvey*, pp. 21–2.

Professor of Physiology at Rome, appeared recently in German dress[1], and spread broadcast views to which, with a chauvinism unworthy of their history, our Italian brethren still adhere. It has been well said 'that he alone discovers who proves', and in the matter of the circulation of the blood this was reserved for the pupil of Fabricius. Skipping many arduous years, we next meet him as Lumleian Lecturer to the College.

III

The really notable years in the annals of medicine are not very numerous. We have a calendar filled with glorious names, but among the saints of science, if we know an era it is as much as can be expected—perhaps because such men are less identified with achievements than representative of the times in which they lived. With many of our greatest names we cannot associate any fixed dates. The Greeks who made Hippocrates possible are associated by tradition with some theory, or a small point in anatomy, or merely with the place of their birth; and the 'floruit' cannot always be fixed with accuracy.

Hippocrates himself, Erasistratus, Galen, and Araetius have no days in our calendar. We keep no festival in their honour, as the churches honour St. Jerome and St. Chrysostom. It is not until after the Renaissance that certain years (*anni mirabiles*) stand out in bold relief as connected with memorable discoveries, or with the publication of revolutionary works. Nevertheless, only a few in each century; even the sixteenth, so rich in discoveries, has not more than five or six such years, and not one of them is connected with work done in

[1] Edited by Professor Verworn.

this country. In the seventeenth century it is hard to name four made memorable by the announcement of great discoveries or the publication of famous works; in the eighteenth century there are barely three; while in the century just completed, though it is replete with extraordinary discoveries, one is hard pressed to name half a dozen years which flash into memory as made ever memorable by great achievements. Of the three most important, anaesthesia, sanitation, and antiseptic surgery, only the first can be dated (1846); and that for its practical application. For the other two discoveries, who will settle upon the year in which the greatest advance was made, or one which could be selected for an anniversary in our calendar?

There is one *dies mirabilis* in the history of the College—in the history, indeed, of the medical profession of this country, and the circumstances which made it memorable are well known to us. At ten o'clock on a bright spring morning, April 17, 1616, an unusually large company was attracted to the New Anatomical Theatre of the Physicians' College, Amen Street. The second Lumleian Lecture of the annual course, given that year by a new man, had drawn a larger gathering than usual, due in part to the brilliancy of the demonstration on the previous day, but also it may be because rumours had spread abroad about strange views to be propounded by the lecturer. I do not know if at the College the same stringent rules as to compulsory attendance prevailed as at the Barber Surgeons' Hall. Doubtless not,[1] but the President, and Censors, and Fellows would be there in due array; and with the help

[1] Mr. William Fleming, the College Bedell, calls my attention to the Statutes of that period. Under penalty of a fine all Fellows and candidates were commanded to attend for at least five years.

of the picture of 'The Anatomy Lecture by Bannister', which is in the Hunterian collection, Glasgow, and a photograph of which Dr. Payne has recently put in our library, we can bring to mind this memorable occasion. We see the 'Anatomy', one of the six annually handed over to the College, on the table, the prosector standing by the skeleton near at hand, and very probably on the wall the very *Tabulae* of dissection of the arteries, veins, and nerves that hang above us to-day. But the centre of attention is the lecturer—a small dark man, wand in hand, with black piercing eyes, a quick vivacious manner, and with an ease and grace in demonstrating, which bespeaks the mastery of a subject studied for twenty years with a devotion that we can describe as Hunterian. A Fellow of nine years' standing, there was still the salt of youth in William Harvey when, not we may suppose without some trepidation, he faced his auditors on this second day—a not uncritical audience, including many men well versed in the knowledge of the time and many who had heard all the best lecturers of Europe.

The President, Henry Atkins, after whose name in our Register stands the mysterious word 'Corb', had already had his full share of official lectures, less burdensome three hundred years ago than now. Let us hope the lecture of the previous day had whetted his somewhat jaded appetite. The Censors of the year formed an interesting group: John Argent, a Cambridge man, a 'great prop of the college', and often President, of whom but little seems known; Richard Palmer, also of Cambridge, and remembered now only for his connexion with Prince Henry's typhoid fever, as Dr. Norman Moore has told us; Mathew Gwinne of Oxford, first Professor of Physic at Gresham College and a play-

wright of some note in his day; and Theodore Goulston of Merton College, one of our great benefactors, and for 267 years past and gone purveyor-in-chief of reputation to the younger Fellows of the College. Mayerne would be there, not yet a Fellow, but happy in his escape from the Paris Faculty; still dusty with conflict, he would scent the battle afar in the revolutionary statements which he heard. Meverell, fresh from incorporation at Cambridge, also not yet a Fellow; Moundeford, often President, whose little book *Vir Bonus* sets forth his life. Paddy, a noteworthy benefactor, a keen student, still gratefully remembered at Oxford, would have strolled in with his old friend Gwinne; Baldwin Hamey the elder, also a benefactor, would be there, and perhaps he had brought his more interesting son, then preparing to enter Leyden, whose memory should be ever green among us. Let us hope Thomas Winston, probably an old fellow student at Padua, and later appointed Professor of Physic at Gresham College, was absent, as we can then be more charitable towards the sins of omission in his work on *Anatomy*, published after his death, which, so far as I can read, contrary to the statement of Munk (Roll of the College), contains no word of the new doctrine. As an old Paduan, and fresh from its anatomical school, the younger Craige would not be absent. Fludd, the Rosicrucian, of course, was present; attracted, perhaps, by rumours of anti-Galenian doctrines which had served to keep him out of the College; nor would he be likely to be absent at the festival of one whom he calls his 'physicall and theosophicall patron'. And certainly on such an occasion that able Aberdonian, Alexander Reid, would be there, whose *Σωματογραφία* had just appeared,[1] with an extraordinarily full account

[1] Copy in Bodleian Library.

of the vascular system. Reid was a good anatomist, one of our most distinguished Medico-Chirurgical Fellows, and a liberal benefactor. If, as has been stated, he was not a convert on account of his age, it was on account of his youth, for the Harveian doctrine, if in meagre form, is to be found in the later editions (5th) of his *Manual*. But we would miss Lodge, the poet, 'cried up to the last for physic,' as he had recently started for the Continent. And we may be sure that Harvey's old fellow students at Padua—Fortescue, Fox, Willoughby, Mounsell, and Darcy—would honour their friend and colleague with their presence; and Edward Lister, also a fellow Paduan, the first of his name in a family which has given three members to our profession—two distinguished and one immortal.[1] It was not a large gathering, as the Fellows, members, licentiates, and candidates numbered only about forty; but as the lecture was a great event in the community, there would be present many interested and intelligent laymen, of the type of Digby, and Ashmole, and Pepys—the 'curious', as they were called, for whom throughout the seventeenth century the anatomy lecture equalled the play in attraction. As it was delivered in Latin, only interspersed here and there with English words and illustrations, there were probably more who heard than who comprehended, as Sir Thomas Browne indicated to his son Edward when he lectured at Chirurgeons' Hall.

It is a fortunate and perhaps a unique circumstance in bibliography that the manuscript of this course of lectures should have been preserved, and that we

[1] I followed Munk's *Roll*, but Lord Lister tells me that he does not know of a relationship. I am sorry, as Martin Lister deserves the honour.

should be able to follow the demonstration step by step—a long and formidable procedure, as the whole anatomy of the thoracic organs was discussed. I dare say there was a prolonged break between the morning and the afternoon lecture 'for a fine dinner', such as Pepys described, when, on February 27, 1663, he went with Harvey's pupil, Scarborough, to Chirurgeons' Hall and was used with 'extraordinary great respect'. Towards the close, after discussing, in novel and modern terms, the structure and action of the heart, Harvey summed up in a few sentences the conclusion of the matter. They stand as follows in the *Praelectiones* (published by the College in 1886):

W. H. constat per fabricam cordis sanguinem
per pulmones in Aortam perpetuo
transferri, as by two clacks of a
water bellows to rayse water
constat per ligaturam transitum sanguinis
ab arteriis ad venas
unde perpetuum sanguinis motum
in circulo fieri pulsu cordis.

Probably few in the lecture hall appreciated the full meaning of these words, which to some must have seemed a blot on the whole performance; while others, perhaps, all with the feelings of the fishes after St. Anthony's well-known sermon,

Much delighted were they,
But preferred the old way,

returned to their homes wondering what he would say on the morrow when the 'divine banquet of the brain' was to be spread before them.

One thing was certain—the lecture gave evidence of a skilled anatomist of remarkably wide experience and well versed in literature from Aristotle to Fabricius. While Harvey could agree with John Hunter, who

states in a manuscript introductory lecture in the College library—'I deliver nothing I have not seen and observed myself'—he could not add with him, 'I am not a reader of books.' Nearly one hundred references to some twenty authors occur in the manuscript of the thorax, or, as he calls it, the 'parlour' lecture.

It is a great pity that we have no contemporary account of the impression on such men as Mayerne or Reid of the new doctrines, for which we have the author's statement that they were taught annually and elaborated. So far as I know there is no reference to show that the lectures had any immediate influence in the profession, or indeed that the subject-matter ever got beyond the circle of the college. We are not without a first-hand account by the author of his reception: 'These views as usual pleased some more, others less; some chid and calumniated me, and laid it to me as a crime that I had dared to depart from the precepts and opinions of all anatomists; others desired further explanation of the novelties.'

It is difficult for us to realize the mental attitude of the men who listened year by year as the turn of the 'Parlour Lecture' came. Their opinions, no less firmly held than is our positive knowledge, did not get much beyond: 'The great dictator Hippocrates puts us in mind of it, Galen has a thousand times inculcated the same, the prince of the Arabian tribe, Avicen, has set his seal unto it.' This expresses their mental state, and such a heresy as a general circulation could scarcely be appreciated; and in a man of such good parts as Harvey would in pity be condoned, just as we overlook the mild intellectual vagaries of our friends.

Bootless to ask, impossible to answer, is the question why Harvey delayed for twelve years the publication

of his views. He seems to have belonged to that interesting type of man, not uncommon in every age, who knows too much to write. It is not a little remarkable that this reticence of learning has been a strong mental feature in some of the greatest of discoverers. Perhaps it was the motive of Copernicus, who so dreaded the prejudices of mankind that for thirty years he is said to have detained in his closet the *Treatise of Revolutions*. From what Harvey says, very much the same reasons restrained the publication of his work. To the lesser circulation, with the authority of Galen and Columbus to support it, men 'will give their adhesion', but the general circulation 'is of so novel and unheard-of character that I not only fear injury to myself from the envy of a few, but I tremble lest I have mankind at large for my enemies, so much doth wont and custom, that has become as another nature, and doctrine once sown and that hath struck deep root and rested from antiquity, influence all men'. He felt, as he says to Riolan, that it was in some sort criminal to call in question doctrines that had descended through a long succession of ages and carried the authority of the ancients; but he appealed unto Nature that bowed to no antiquity and was of still higher authority than the ancients. Men have been for years in conscious possession of some of the greatest of truths before venturing to publish them. Napier spent twenty years developing the theory of Logarithms; and Bacon kept the *Novum Organum* by him for twelve years, and year by year touched it up—indeed, Rowley states that he saw twelve copies. Two other famous discoveries by Englishmen have the same curious history—the two which can alone be said to be greater than the demonstration of the circulation of the blood. Zachariah

Wood speaks of Harvey as the surmiser of the little world, to distinguish him from another Englishman who first went about the greater world. But a greater than both—Isaac Newton—had grasped the secret of a cosmic circulation, and brooded in silence over the motion of the spheres for more than twenty years before publishing the *Principia*. Between the writing of the rough sketch in 1842 and the appearance of the *Origin of Species* seventeen years elapsed; and from the date of the journal notes, 1836, in which we have the first intimation of Darwin's theory, more than twenty years. In Harvey's case this intellectual reticence, this hesitation 'to quit the peaceful haven', as he says, has cost us dear. Only a happy accident gave us the *De Generatione*, and the College can never be too grateful to Sir George Ent for that Christmas visit, 1650, so graphically described, to which we owe one of the masterpieces of English medicine. How many seventeenth-century treatises we could have spared to have had the *Practice of Medicine conformable to his Thesis of the Circulation of the Blood*! How instructive his prospective *Medical Observations* would have been we can gather from the remarkable series of cases scattered through the manuscript notes and his published writings. His 'treatise apart' on *Eventilation* or *Respiration*; the *Medical Anatomy*, or *Anatomy in its Application to Medicine*, as he says, 'I also intend putting to press'; the work 'from observations in my possession' on *Organs of Motion in Animals*--all of these, with the work on *Generation in Insects*, and others mentioned by Dr. Merrett,[1] then library keeper (1667), were probably dispersed when those sons of Belial ransacked his chambers at Whitehall.

[1] Munk, *Roll of the College*, vol. i, p. 132.

'Still the die is cast, and my trust is in the love of truth and the candour that inheres in cultivated minds.' With these words he consoles himself, knowing from experience that the publication of even a portion of the work would raise a tempest. Zachariah Wood in the preface to the English edition, 1673, expresses what many of his contemporaries must have felt, 'Truly a bold man indeed, O disturber of the quiet of physicians! O seditious citizen of the Physical Commonwealth! who first of all durst oppose an opinion conformed for so many ages by the consent of all.' De Bach of Amsterdam describes the dilemma in which teachers found themselves: 'This new thing I did examine, which the first entrance did seem very easily to be refuted, but being weighed in a just balance, and having added to reason my own ey-sight it was found inexpugnable, nay (the very prick of truth enforcing) to be embraced with both arms. What should I doe? Must Hippocrates be left, Galen slighted? No, if we follow the truth senced with reason and our sense, we are still Hippocrates his, we are still Galen's' (English edition, 1653).

The history of the next thirty years illustrates the truth of Locke's dictum in the struggle for acceptance. Not the least interesting part of the story, it should be told at greater length and with more detail than it has yet received—more than I am able to give it. That the repeated demonstrations, aided by the strong personal influence of the man, brought the College, as a body, to the new views is witnessed rather by the esteem and affection the Fellows bore to Harvey than by any direct evidence. The appearance of the book in 1628 made no great stir; it was not a literary sensation—a not uncommon fate of epoch-making works, the authors of which are too far ahead of their contemporaries to be

appreciated. The same thing happened to Newton's *Principia*; as Sir William Petty remarks, 'I have not met with one man that put an extraordinary value on the book.'

Among Englishmen, Primrose alone, brought up among the strictest sect of the Galenists, and at the time not a Fellow—wrote a criticism from the old standpoint (1632), and remained unconvinced twelve years later, as his controversy with Regius shows. And only one special treatise in favour of the circulation was written in England—that of Sir George Ent, a pupil and friend of Harvey, who wrote (1641) specially against Parisanus, a Venetian, a foeman quite unworthy of his quill. In the universities the new doctrine rapidly gained acceptance—in Cambridge through the influence of Glisson, while in part to Harvey's work and influence may be attributed that only too brief but golden renaissance of science at Oxford. A little incident mentioned in the autobiographical notes of the celebrated Wallis shows how the subject was taken up quite early in the universities: 'And I took into it the speculative part of physick and anatomy as parts of natural philosophy, and, as Dr. Glisson has since told me, I was the first of his sons who (in a public disputation) maintained the circulation of the blood, which was then a new doctrine, though I had no design of practising physick.' This was in the early 'thirties'. But the older views were very hard to displace, and as late as 1651 we find such intelligent members of the 'invisible college' as Boyle and Petty carrying out experiments together in Ireland to satisfy themselves as to the truth of the circulation of the blood.

It took much longer for the new views to reach the textbooks of the day. From no work of the period

does one get a better idea of the current anatomical and physiological teaching in London than from Crooke's *Body of Man* (1615 and 1631). Collected out of Vesalius, Plantinus, Platerius, Laurentius, Valverda, Bauchinus, and others, it is an epitome of their opinions, with the comments of the professor who read the anatomy lecture to the Company of the Barber Surgeons. In the preface to the first edition he speaks of the contentment and profit he had received from Dr. Davies's Lumleian Lectures at the College of Physicians. There is no indication in the second edition that he had benefited by the instruction of Dr. Davies's successor. Galen is followed implicitly, with here and there minor deviations. The views of Columbus on the lesser circulation are mentioned only to be dismissed as superfluous and erroneous. The Gresham Professor of the day, Dr. Winston, makes no mention of the new doctrine in his *Anatomy Lectures* which were published after his death, 1651, and are of special interest as showing that at so late a date a work could be issued with the Galenian physiology unchanged. In Alexander Reid's *Manual*, the popular textbook of the day, the Harveian views are given in part in the fifth edition, in which, as he says in the preface, 'the book of the breast' is altogether new—an item of no little interest, since he was a man advanced in years, and, as he says, 'the hourglass hasteneth, and but a few sands remain unrun.' Highmore, the distinguished Dorsetshire anatomist, and a pupil of Harvey, in his well-known *Anatomy* published in 1651, gives the ablest exposition of his master's views that had appeared in any systematic work of the period, and he urges his readers to study the *de Motu Cordis* as 'fontem ipsum' from which to get clearer knowledge. He quotes an appropriate motto for the period—*laudamus veteres: sed*

nostris utimur annis. But even so late as 1671 the old views were maintained in the English edition of Riolan. And yet the knowledge of Harvey's views must have spread widely, not only in the profession, but in that large outside circle of distinguished men who felt the new spirit of science working in their veins. From converse or from the Lumleian lectures, which no doubt he often attended, Kenelm Digby must have had the information about Harvey's views on generation, as at the date of the issue of his *Two Treatises*, 1644, they had not been published anywhere. Though he knew well the motion of the blood as expounded by Harvey, and had, in making his great antidote, studied the action of the viper's heart, Digby, like Descartes, could not emancipate himself from the old views, as shown in the following passage: 'But if you desire to follow the blood all along every steppe, in its progresse from the hart round about the body, till it returne back againe to its center, Doctor Harvey, who most acutely teacheth this doctrine, must be your guide. He will show you how it issueth from the hart by the arteries; from whence it goeth on warming the flesh, untill it arrive to some of the extremities of the body: and by then it is grown so coole (by long absence from the fountaine of its heate; and by evaporating its owne stocke of spirits, without any new supply) that it hath need of being warmed anew; it findeth itself returned backe againe to the hart, and is there heated againe, which returne is made by the veines, as its going forwardes, is performed only by the arteries.'

Sir William Temple well expresses the attitude of mind of the intellectual Philistine of the time, who looked for immediate results. Speaking of the work of Harvey and of Copernicus he says: 'Whether either of

these be modern discoveries or derived from old foundations is disputed; nay, it is so too, whether they are true or no; for though reason may seem to favour them more than the contrary opinions, yet sense can hardly allow them, and to satisfy mankind both these must concur. But if they are true, yet these two great discoveries have made no change in the conclusions of Astronomy nor in the practice of Physic, and so have been but little use to the world, though, perhaps, of much honour to the authors.'[1] It is pleasant to notice that our old friend, Sir Thomas Browne, with his love of paradox, declared that he preferred the circulation of the blood to the discovery of America.

Of the reception of Harvey's views in Holland and Germany there is nothing to add to the admirable account given by Willis. The early and strenuous advocacy of Descartes must have influenced the Dutch physicians; but in this, as in so many other things, the infection of his early years proved too powerful, and he could not get rid of the 'ancient spirits'. Of the discovery of the circulation he says[2] it is 'la plus belle et la plus utile que l'on pût faire en médecine'. 'Tout à fait contraire au sein (*sic*) touchant le mouvement du cœur,' which he held to be due to an ebullition of the spirits—a sort of ferment (*espèce de levain*) existing in it. The theory was more actively discussed in Holland than elsewhere; and the writings of Drake, Walaeus, Regius, Plempius, Sylvius, de Bach, Conringius, T. Bartholini (the Dane), and others, threshed out the whole question very thoroughly, and their views, with those of Hoffman, Slegel, and others, are referred to by Willis and given in greater detail by Riolan.[3]

[1] *Works*, 1814, vol. iii, p. 293. [2] Cousins's edition, vol. ix, p. 159.
[3] *Opuscula Anatomica.* London, 1649.

In the oft-quoted statement that Harvey, 'conquering envy, hath established a new doctrine in his lifetime,' Hobbes was right so far as England and Holland are concerned. But it was far otherwise in France, where he met with a bitter and protracted hostility. The Medical School of the University of Paris, at the time one of the best organized and most important in Europe, declined to accept the circulation of the blood during his lifetime and for some years after his death. The history of the period is pictured for us in vivid colours in that *journal intime* which Gui Patin kept up with his friends, Spohn and Falconet of Lyons and the Belins (*père et fils*). With all his faults, particularly his scandalous lack of charity, one cannot but feel the keenest sympathy with this dear old man. Devoted to his saints, Hippocrates and Galen, Fernel and Duret, and to his teachers, Piêtre and Riolan, to him the circulation of the blood was never more than an ingenious paradox. To such a lover of books and of good literature everything can be forgiven, and in his letters we follow with deepest interest his vigorous campaign against his dear enemies, the *Cuisiniers arabesques*, who had enslaved people and physicians alike, the haemophobes, the chemists, the astrologers, and the *stibiate*, or as he calls it, the *Stygiate* group. To him the Koran was less dangerous than the works of Paracelsus, the appearance of the new Geneva edition of which he deeply deplores. Reverence for Galen and friendship with Riolan, rather than any deep interest in the question, inspired his opposition. To him the new doctrine was ridiculous, and it was he who called the partisans of it *circulateurs* in allusion to the Latin word circulator, meaning charlatan. In 1652 he writes to Spohn that the question is still open whether the blood passes through the septum

of the heart or through the lungs. In 1659 he promises to send him a work of Vinean against the circulation.[1] More extraordinary still is the fact that as late as 1670, twelve years after Harvey's death, the thesis of one Cordelle, a bachelor of medicine, publicly discussed the circulation of the blood, and Gui Patin, who presided, decided in the negative. The fiction of an ingenious narrator, *le doux songe* of Harvey, are the terms in which he speaks of it. The whole passage is worth quoting as possibly the last public denouncement of what seemed a rank heresy to the old Galenists: 'Supposer que le sang se meut toujours circulairement, que de la veine cave ascendante il tombe dans l'oreillette droite du cœur, que de là il aille traverser toute la substance du poumon pour retomber de là dans l'oreillette gauche en passant par la veine pulmonaire, et qu'enfin de là il soit projeté dans l'aorte et toutes les artères qui le feront passer dans les veines et dans le cœur, lui faisant par ce moyen suivre un circuit, voilà le doux songe de Harvey, la fiction d'un narrateur ingénieux, mais nullement prouvée par l'évidence. La circulation du sang, son transport circulaire par les vaisseaux, c'est l'enfantement d'un esprit oisif, un vrai nuage qu'embrassent les Ixions pour procréer les Centaurs et les monstres.'[2]

As I said, we can forgive a great deal to the man who has left us such a picture of seventeenth-century life, drawn, all unconsciously, with a master hand; and through the mists of prejudice and hate we can recognize the good sense which had the courage to protest against the *forfanterie arabesque et bézoardesque* in much of the therapeutics of the day.

[1] *Lettres*, vol. i, p. 324, édition 1694.
[2] *Gui Patin*, par Félix Larrieu. Paris, 1889.

Though a professor in the Paris Faculty and a brilliant lecturer, Patin at that time did not occupy such a distinguished position, nor was his opposition of such importance as that of Riolan—'John Riolan, the Son, the most experienced Physician in the Universitie of Paris, the Prince of Dissection of Bodies, and the King's professor, and Dean of Anatomie and of the knowledge of simples, chief physician to the queen-mother of Louis XIII'—as he is quaintly, but very truly, described by Harvey.[1] Brought up by his father to regard Hippocrates and Galen as the sources of all wisdom, the intensity of his zeal increased with his years until at last 'to see the physic of Galen kept in good repair' became the passion of his life. The deep pity of it all is that such mental blindness should have stricken a really great man, for he was a brilliant anatomist and teacher, the author of the best anatomical textbook of its day, a man of affairs, profoundly versed in literature, a successful practitioner, and for years the head of the profession in France.

The opposition of such a man was serious, and naturally had a profound influence. Not content with the comparatively brief statement in the *Encheiridion*, 1648, Riolan published in England the following year his *Opuscula Anatomica nova*, one very large section of which is taken up with the problem of circulation. It was this probably as much as a present of the Encheiridion that induced Harvey to break his long silence and to reply. After a report of a discussion upon a thesis in 1645 and a statement of objections, a most interesting discussion follows of the literature, in which the opinions of various writers are examined, particu-

[1] Title-page of English edition of the Letter.

larly those of Cartesius, Conringius, Walaeus, and Plempius.

It is quite possible that the second *Disquisition* of Harvey to Riolan, published with the first in duodecimo form at Cambridge in 1649, was brought out by Riolan's latter publication, though it is not directly referred to. Little did Harvey appreciate that his old friend was both blind and deaf—incapable of seeing obvious facts. It was not a question of being conversant with anatomy or of having had experience, on both of which points Harvey dwells at length. Riolan knew his anatomy as well as, or better than, any man of his generation. It was not that he would not—but that he could not—see the truth which was staring him in the face. As Reynaud[1] mentions, an occasional thesis (Fagon, 1663; Mattot, 1665) supporting the circulation did slip through the Faculty: but the official recognition in France did not come until 1673, when Louis XIV founded a special Chair of Anatomy at the Jardin des Plantes for the propagation of the new discoveries.

The satire of Molière and the *Arrêt burlesque* of Boileau completed the discomfiture of the 'anticirculateurs', but it had taken nearly half a century to overcome the opposition of those who saw in the new doctrines the complete destruction of the ancient system of medicine.

IV

Even when full grown in the conscious stage Truth may remain sterile without influence or progress on any aspects of human activity. One of the most remarkable

[1] *Les Médecins au temps de Molière*, 1863.

of phenomena in mental biography is the failure of the Greeks to succeed after giving the world such a glorious start. They had every essential for permanent success: scientific imagination, keen powers of observation; and if in the days of Hippocrates the mathematical method of interrogating Nature prevailed rather than the experimental, Galen carried the latter to a degree of perfection never again reached until the time of Harvey. Only when placed in its true position in relation to Greek religion and philosophy, as has been done so skilfully by Gomperz,[1] do we realize the immensity of the debt we owe to those 'our young light-hearted masters'. And Gomperz makes clear the nature of the debt of Greek thought to the practical sense of the physicians. But alas! upon the fires they kindled were poured the dust and ashes of contending philosophies, and neither the men of the Alexandrian school nor the brilliant labours of the most encyclopaedic mind that has ever been given to medicine sufficed to replenish them. Fortunately, here and there amid the embers of the Middle Ages glowed the coals from which we have lighted the fires of modern progress. The special distinction which divides modern from ancient science is its fruitful application to human needs—not that this was unknown to the Greeks; but the practical recognition of the laws of life and matter has in the past century remade the world. In making knowledge effective we have succeeded where our masters failed. But this last and final stage, always of slow and painful

[1] The three volumes of his *Greek Thinkers*, now in English dress, should be studied by every young man who wishes to get at the foundations of philosophy. The picturesque style of Professor Gomperz and his strong sympathy with science add greatly to the interest of the work.

consummation, is evolved directly from truths which cannot be translated into terms intelligible to ordinary minds. Newton's great work influenced neither the morals nor the manners of his age, nor was there any immediate tangible benefit that could be explained to the edification or appreciation of the 'ordinary man' of his day; yet it set forward at a bound the human mind, as did such truths as were proclaimed by Copernicus, by Kepler, by Darwin, and others. In a less conspicuous manner Harvey's triumph was on the same high plane. There was nothing in it which could be converted immediately into practical benefit, nothing that even the Sydenhams of his day could take hold of and use. Not so much really in the demonstration of the fact of the circulation as in the demonstration of the method—the *Inventum mirabile* sought for by Descartes, the *Novum Organum* of Bacon—lies the true merit of Harvey's work. While Bacon was thinking, Harvey was acting; and before Descartes had left his happy school at La Flèche Harvey was using *la nouvelle méthode*; and it is in this way that the *de Motu Cordis* marks the break of the modern spirit with the old traditions. No longer were men to rest content with careful observation and with accurate description; no longer were men to be content with finely spun theories and dreams, which 'serve as a common subterfuge of ignorance'; but here for the first time a great physiological problem was approached from the experimental side by a man with a modern scientific mind, who could weigh evidence and not go beyond it, and who had the sense to let the conclusions emerge naturally but firmly from the observations. To the age of the hearer, in which men had heard, and heard only, had succeeded the age of the eye, in which men had seen and had been

content only to see. But at last came the age of the hand—the thinking, devising, planning hand; the hand as an instrument of the mind, now reintroduced into the world in a modest little monograph of seventy-two pages, from which we may date the beginning of experimental medicine.

No great discovery in science is ever without a corresponding influence on medical thought, not always evident at first, and apt to be characterized by the usual vagaries associated with human effort. Very marked in each generation has been the change wrought in the conceptions of disease and in its treatment by epoch-making discoveries as to the functions of the body. We ourselves are deeply involved to-day in toxins and antitoxins, in opsonins, tulases, and extracts as a direct result of the researches in bacteriology and in internal secretion. There were sanguine souls in Harvey's day, who lamented with Floyer that the discovery had not brought great and general innovations into the whole practice of physic. But had the old Lichfield physician lived he would have seen the rise of a school based directly upon the studies of Harvey and Sanctorius, the brilliant reasonings of Descartes and the works of Bellini and Borelli. The mechanical school rose in its pride on solid foundations which appealed to practical men with singular force. Very soon that 'beatific epitome of creation', man, was 'marked out like a spot of earth or a piece of timber with rules and compasses', and the medical terminology of the day became unintelligible to the older practitioners who could make nothing of the 'wheels and pulley, wedges, levers, screws, cords, canals and cisterns, sieves and strainers', and they cracked their jokes on 'angles, cylinders, celerity, percussion, resistance, and such-like

terms which they said had no more to do with physic or the human body than a carpenter has in making Venice treacle or curing a fever'. Once accepted, men had a feeling that so important a discovery must change all the usual conceptions of disease. As has been said before, Harvey tells that he had in preparation a *Practice of Medicine conformable to his Thesis of the Circulation of the Blood*, and it soon became customary to put in the title-pages of works some reference to the new doctrine. Even Riolan's *Opuscula Anatomia* makes an allusion to it. Walaeus, a keen defender of Harvey, published in 1660 a little compendium of practice *ad circulationem sanguinis adornata*, but there is nothing in it to suggest any radical change in treatment. Rolfinck's *Dissertationes Anatomicae*, 1650, embracing the older and more recent views in medicine are *ad circulationem accommodatae*, and even as late as 1690 the well-known anatomy of Dionis was *suivant la circulation*. With the loss of his work on the *Practice of Medicine* it is impossible to say whether Harvey's own practice was modified in any way. To part from the spirits and humours must have left his attitude of mind very sceptical, and that his 'therapeutic way' was not admired (as Aubrey tells us) speaks for a change which may have set many against him. More important than any influence upon treatment was the irresistible change in the conceptions of disease caused by destruction of the doctrine of spirits and humours, which had prevailed from the days of Hippocrates. While Harvey, as he says, had in places to use the language of physiology, that is, the language of the day, he makes it very clear, particularly in the second letter to Riolan, that he will have none of the old doctrine to which the *de Motu Cordis* dealt the death-blow.

But the moving hand reminds your orator, Mr. President, of a bounden duty laid upon him by our great Dictator to commemorate on this occasion by name all of our benefactors; to urge others to follow their example; to exhort the Fellows and Members to study out the secrets of Nature by way of experiment; and, lastly, for the honour of the profession, to continue in love and affection among ourselves. No greater tribute to Harvey exists than in these simple sentences in which he established this lectureship, breathing as they do the very spirit of the man, and revealing to us his heart of hearts. Doubtless, no one more than he rejoices that our benefactors have now become so numerous as to nullify the first injunction; and the best one can do is to give a general expression of our thanks, and to mention here and there, as I have done, the more notable among them. But this is not enough. While we are praising famous men, honoured in their day and still the glory of this College, the touching words of the son of Sirach remind us: 'Some there be that have no memory, who are perished as though they had never been, and are become as though they had never been born.' Such renown as they had, time has blotted out; and on them the iniquity of oblivion has blindly scattered her poppy. A few are embalmed in the biographical dictionaries; a few are dragged to light every year at Sotheby's, or the memory is stirred to reminiscence as one takes down an old volume from our shelves. But for the immense majority on the long roll of our Fellows—names! names! names!—nothing more; a catalogue as dry and meaningless as that of the ships, or as the genealogy of David in the Book of Chronicles. Even the dignity of the Presidential chair does not suffice to float a man down the few centuries that have passed since the foundation

of the College. Who was Richard Forster? Who was Henry Atkins? Perhaps two or three among us could tell at once. And yet by these men the continuity and organic life of the College has been carried on, and in maintaining its honour, and furthering its welfare, each one in his day was a benefactor, whose memory it is our duty, as well as our pleasure, to recall. Much of the nobility of the profession depends upon this great cloud of witnesses, who pass into the silent land—pass, and leave no sign, becoming as though they had never been born. And it was the pathos of this fate, not less pathetic because common to all but a few, that wrung from the poet that sadly true comparison of the race of man to the race of leaves!

The story of Harvey's life, and a knowledge of the method of his work, should be the best stimulus to the Fellows and Members to carry out the second and third of his commands; and the final one, to continue in love and affection among ourselves, should not be difficult to realize. Sorely tried as he must have been, and naturally testy, only once in his writings, so far as I have read, does the old Adam break out. With his temperament, and with such provocation, this is an unexampled record, and one can appreciate how much was resisted in those days when tongue and pen were free. Over and over again he must have restrained himself as he did in the controversy with Riolan, of whom, for the sake of old friendship, he could not find it in his heart to say anything severe. To-day his commands are easier to follow, when the deepened courtesies of life have made us all more tolerant of those small weaknesses, inherent in our nature, which give diversity to character without necessarily marring it. To no man does the right spirit in these matters come by nature, and I would urge upon

our younger Fellows and Members, weighing well these winged words, to emulate our great exemplar, whose work shed such lustre upon British Medicine, and whom we honour in this College not less for the scientific method which he inculcated than for the admirable virtues of his character.

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